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THE JOURNAL OF THE

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JULY, 1934

Depreciation Allowances

By FREDERICK M. BABCOCK

IT is recognized that the values of real properties derive from their capacity to render services or satisfactions in the form of net monetary returns or amenities. The process of valuation therefore involves prediction of the character anl probable amount of such returns in the future and the determination of the amount in dollars which a purchaser is warranted in paying for the privilege of enjoying the income or the flow of amenities.

It is also recognized that each improved piece of real estate does not retain the same income- or amenity-producing capacity from year to year but that the returns change in response to diverse and complex forces. These factors include changes in the value of money, variations in the supply of accommodations in the community, changes in the quality, type, and desirability of neighbors, physical depreciation of structure, innovations in building design and equipment, and a number of other influences. The net result of the various factors, excluding only changes in the value of money, is a gradual reduction in the value of the property. That is, the agencies and influences which cause depreciation and obsolescence destroy, at various rates, the value of buildings.

In any valuation to determine the price which a purchaser is warranted in paying for a property, the appraiser finds it necessary to take depreciation and obsolescence into account. These factors will, in general, adversely affect the flow of future returns to be derived from the property and it follows that a forecast of future returns made for valuation purposes must include an allowance or provision for the decline. Several methods are used in common practice. They give results which differ greatly. Certain methods are sound; others are not. It is the purpose of this paper to review and briefly describe each method and to make inquiry with respect to its logic and validity.

Methods used in current practice may be classified into three categories: (1) Methods which use a selected rate of depreciation, (2) Methods which use a sinking fund, and (3) Methods which discount predicted future returns directly.

Methods Which Use a Rate of Depreciation

In the valuation procedure which utilizes a rate of depreciation, the appraiser commences by making a valuation of the building (by any method, but usually by estimating its replacement cost). In customary practice he also makes a prediction of earnings from which he deducts two amounts in order to find out how much return he can allocate to the land. First he deducts an amount representing an interest return on the building valuation. Secondly he deducts another amount which is adequate to return the entire building valu-

ation in installments during the predicted remaining life of the building.

There are numerous variations of the above-described procedure, including the straight-line method, the weighted-rate method, the reducing-balance method, and the sum-of-years'-digits method. Valuators of real estate have rarely attempted to use the last three. The first one, however, is in common use, is recommended by some governmental agencies, is approved in various life insurance company appraisal manuals, and is accorded recognition and approval as sound practice by many of the writers on valuation subjects.

These methods are incorrect, are based on specious reasoning, and are not applicable to the valuation of real estate properties. Inasmuch as the last three, and others not listed, are simply arbitrary modifications of the straight-line method and differ from it in no underlying principle, we discuss the straight-line method as typical of the entire category.

In the straight-line method, the value of a building is expected to decline at a uniform rate throughout its life. The rate of depreciation is determined solely by the estimate of total building life and the building valuation. If a new building has been appraised at $25,000 and is expected to have an economic life of 40 years, the method assumes that the value of the building will decline at the rate of $625 per year. The rate of depreciation corresponding to a 40-year life is 2.5 percent.

In appraising a new building in this manner, the sole use which the valuator makes of this depreciation allowance is to provide a basis for the calculation of a land value. If his prediction of probable future net earnings before depreciation is $4,000 per year, then his valuation of the property might be summarized in the following manner:

A

Predicted net earnings		$4,000	
Building valuation			$25,000
Interest on Bldg. at 10%	$2,500		
Yearly depreciation at 2.5%	625	3,125	
Residual land returns		$ 875	
Land valuation at 7 percent			12,500
Total valuation			$37,500

The process does not modify the building valuation. It *commences* with valuation of the building. If the quality of construction and other conditions were such that the appraiser felt justified in assigning a 25-year life instead of the 40-year life to the building, the valuation would have been as follows:

B

Predicted net earnings		$4,000	
Building valuation			$25,000
Interest on Bldg. at 10%	$2,500		
Yearly depreciation at 4%	1,000	3,500	
Residual land returns		$ 500	
Land valuation at 7 percent			7,143
Total valuation			$32,143

In these two examples the method is applied to a new building. In applying the method to structures which are in mid-life, the customary procedure is to determine the replacement cost of the building, deduct an allowance for accrued depreciation, and treat the resulting building valuation in the same manner. The procedure is usually such that the straight-line method is applied both to the determination of accrued depreciation and to the calculation of the amounts of the yearly deductions for depreciation from the prediction of earnings.

Let us assume we are appraising the above 40-year building at the beginning of its 16th year of life and that it is expected to have a remaining useful life of 25 years. Because older, the earnings may now be at the rate of $3,000 yearly. Such a valuation may be summarized in this manner:

C

Predicted net earnings		$3,000
Building, replacement cost new	$25,000	

Accrued depreciation, 15 yrs. 2.5%	9,375	
Building valuation		$15,625
Interest on Bldg. value at 10% ....$ 1,563		
Yearly depreciation: 2.5% of $25,000 or 4% of $15,625	625	2,188
Residual land returns ....$ 812		
Land valuation at 7 percent...........		11,600
Total valuation		$27,225

The straight-line method of depreciation deducts an allowance for depreciation in exactly the same way that operating expense items are deducted. The rate of depreciation and, consequently, the amount of the depreciation items depends solely upon the prediction of remaining life and the value which has been ascribed to the building.

The defects of the straight-line method are many. First of these is that appraising presupposes a purchaser and that the valuation must be made at a figure which the net earnings can support including a return of capital equal to the successive losses which anticipated depreciation and obsolescence will occasion. The straight-line method ignores this essential and proceeds directly to a valuation of the building. In effect, the process includes an expense item based upon the answer.

Another difficulty is that in all midlife buildings, the process makes the building value equal the replacement cost of construction less an amount representing accrued depreciation based on the age of the building and a rate of depreciation. Accrued depreciation cannot be affected by the age of a building. Past events do not determine values. Events expected to occur in the future determine values. If the earning expectancies of two buildings are alike, their values cannot concur simply because one building happens to be somewhat older than the other. If it is argued that common observation shows older buildings to be worth less, it may still be pointed out that they are not worth less because they are older but because they do not have as long or as useful remaining lives as the newer buildings. A process of depreciation which must or does use the specific age of a building cannot be accepted as sound procedure.

In the third place, the straight-line method requires that the process of valuation make the land valuation residual under the actual encumbering building, regardless of the degree to which it represents the highest and best use of the land, or it requires recourse to the summation method of valuation.

The first alternative, making land residual under the actual building, can lead only to the most absurd types of calculation. For illustration, consider Valuation "C" above. Presume that, because of changes in the quality of the district and the erection of many modern competitive buildings, the valuator predicts that future net earnings cannot be expected to average $3,000 but will be only $1,600. The process leads the appraiser into this computation:

D

Predicted net earnings..........$1,600		
Building, replacement cost new $25,000		
Accrued depreciation .. 9,375		
Building valuation		$15,625
Interest on Bldg. value at 10% ....$ 1,563		
Yearly depreciation ...	625	2,188
Residual land returns (Deficit).$ 588		
Land valuation at 7 percent............		... ?
Total valuation		... ?

The other alternative, to make a summation valuation, leads to as great difficulty and does not warn the appraiser with respect to the exceedingly serious errors possible. Such a valuation, where straight-line depreciation is used, involves no consideration of the earning capacity and might take the following form:

E

Building, replacement cost new	$25,000
Accrued depreciation, 15 yrs., 2.5%	9,375
Building valuation	$15,625
Land valuation (by comparison)	20,000
Total valuation	$35,625

Fourthly, the straight-line method is almost always applied to an appraiser's estimate of the average yearly net earnings of the property throughout its entire remaining life. Invariably the appraiser has assumed the building income to be in the form of a series of yearly returns, equal and identical, to the termination of the building life. From this income he deducts the series of level yearly items representing the depreciation installments and is left with a series of level yearly amounts which are allocated to interest on the investment in the building. Inasmuch as the actual value of the building declines while the amount of interest remains constant, the rate of return on the building is assumed to increase throughout the life of the building. In valuation "A" above, the rate of return on the building valuation mounted in the following fashion:

In Year	*Building Valuation*	*Interest on Bldg.*	*Rate of Return*
1	$25,000	$2,500	10.00%
2	24,375	2,500	10.26
3	23,750	2,500	10.53
5	22,500	2,500	11.11
10	19,375	2,500	12.90
15	16,250	2,500	15.38
20	13,125	2,500	19.05
25	10,000	2,500	25.00
30	6,875	2,500	36.36
35	3,750	2,500	66.67
38	1,875	2,500	133.33
39	1,250	2,500	200.00
40	625	2,500	400.00

Those among the appraisers who use the straight-line method and who have recognized and considered the above difficulty usually claim that the implication of a constantly increasing rate is not involved in the method because the yearly deductions for depreciation are placed to one side and accumulated and the interest return is jointly on the fund and the remaining value in the building. They point out that the motive which causes owners to deduct depreciation is the desire to have all the capital available to replace the building at the end of its life. In other words, they conceive of the straight-line method as identical with the sinking fund method where the rate of earning on the sinking fund is *nil.*

Several objections apply. Depreciation deductions collected in this manner are not accumulated in strong boxes by owners. Buildings are not rebuilt by means of such funds. When a building depreciates to a point where it is valueless, an owner simply removes it and utilizes the remaining land as best he can. In other words, the capital invested in a building is recovered in installments during its life, not in a lump sum at the end of its life. Furthermore, if the fund is permitted to accumulate, it is illogical to presume that it would be allowed to lie idle and not be invested in some form of interest yielding security. As a matter of fact, the straight-line method of depreciation does not contemplate accumulation of a fund at the end of the life of the building. It contemplates simply the return of capital in installments. Having returned capital in early years, it is manifestly incorrect to take interest on the returned portion in later years.

In the final analysis, the flaw in the straight-line and other methods which use a selected rate of depreciation is that they commence with the answer. The methods require the valuation process to commence with a direct determination of building value rather than with an earnings prediction.

Methods Which Use a Sinking Fund

In the valuation processes which utilize sinking funds, the appraiser

usually commences by making a valuation of the building (by any method, but usually by estimating its replacement cost). In customary practice he also makes a prediction of earnings from which he deducts two amounts in order to find out how much return he can allocate to the land. First he deducts an amount representing an interest return on the building valuation. Secondly, he deducts another amount which is adequate to return the entire building valuation *at the end* of its useful life provided the sums are invested in outside investments and permitted to accumulate at compound interest.

The methods falling within this category are presented with a number of variations but all are typified, in so far as principles are concerned, by the ordinary sinking-fund method which uses two rates, one a "speculative" rate of interest, the other a "safe" rate applicable to the sinking-fund. Valuators of real estate have rarely attempted to use any of these methods except the ordinary sinking-fund method. A considerable number of the writers on valuation subjects recommended the sinking-fund method and accord it an important place in appraisal procedure.

The sinking-fund methods are incorrect and are not applicable to the valuation of real estate. It is therefore quite important to inquire into the line of reasoning involved in the methods and to support the contention that they do not offer a solution of the realty valuation problem.

In the sinking-fund method, the value of a building is assumed to decline throughout its life. A regular rate of decline is not assumed. The essential assumption is that the economic life of the building will be a specific number of years. If a new building has been appraised at $25,000 and is expected to have an economic life of 40 years, the method requires the valuator to determine the level annual annuity which, if contributed to a sinking fund, will permit the fund to accumulate at compound interest to $25,000 in 40 years at a "safe" rate such as 3% or 4%.[1] At 4%, $263.08 deducted from income and set at compound interest each year, will accumulate $25,000 at the end of a 40-year period. At the end of the first year the sinking fund will receive the first contribution, $263.08. At the end of the second year this $263.08 will have increased 4% to $273.60 and the second contribution of $263.08 will be received, bringing the total in the sinking fund to $536.68. At the end of the third year this $536.68 will have increased 4% to $558.15 and the third contribution will be received, bringing the total in the sinking fund to $821.23. The compounding of interest and the addition of yearly contributions of $263.08 each continues to the end of the 40th year at which time the sinking fund will be found to contain precisely $25,000.

In appraising a new building in this manner, the only use which the valuator makes of this depreciation allowance is to provide a basis for the calculation of a land value. If his prediction of probable future net earnings before depreciation is $4,000 per year, then his valuation of the property might be summarized in the following manner:

F

Predicted net earnings		$4,000	
Building valuation			$25,000
Interest on Bldg. at 10%	$2,500		
Yearly sinking fund item	263	2,763	
Residual land returns		$1,237	
Land valuation at 7 percent			17,671
Total valuation			$42,671

The process does not modify the building valuation. It *commenced* with val-

[1] There has been some discussion in the *Journal of the American Institute of Real Estate Appraisers* relative to the fallacy of using the building interest rate, a high rate, in connection with the sinking fund accumulations. Such practice if it exists, must be exceedingly rare, however. The present writer has never encountered a single appraiser who does this.—AUTHOR.

uation of the building. If, for good reasons, the appraiser felt justified in assigning a 25-year life instead of the 40-year life to the building, the valuation would have been as follows:

G

Predicted net earnings		$4,000	
Building valuation			$25,000
Interest on Bldg. at 10%	$2,500		
Yearly sinking-fund item to return $25,000 in 25 yrs. at 4%	600	3,100	
Residual land returns		$ 900	
Land valuation at 7 percent			12,857
Total valuation			$37,857

In these two examples the method is applied to a new building. In applying the method to a structure in mid-life, there are several forms of practice. In every case the process includes a determination of the replacement cost of the building and the deduction of an allowance for accrued depreciation. In one type of process, accrued depreciation is assumed to be equal to the amount which would have accumulated in a sinking fund had such a fund been created at the time the building began its life. Let us assume that we are appraising the above 40-year building at the beginning of its 16th year of life and that it is expected to have a remaining useful life of 25 years. Because older, the earnings may now be at the rate of $3,000 yearly.

In this valuation it is assumed that the owner has been contributing $263.08 yearly to a sinking fund and that the fund has been accumulating at 4% compound interest. Therefore, the fund, after the 15th year, will amount to $5,-267.81. The process assumes that the accrued depreciation is equal to the fund's accumulation. Therefore the present depreciated value of the building is $25,000 less $5,268, or $19,732. One form which such a valuation takes is the following:

H

Predicted net earnings		$3,000	
Building, replacement cost new	$25,000		
Accrued depreciation	5,268		
Building valuation			$19,732
Interest on Bldg. value at 10%	$ 1,973		
Yearly sinking-fund item to return $19,732 in 25 years at 4%	474	2,447	
Residual land returns		$ 553	
Land valuation at 7 percent			7,900
Total valuation			$27,632

Some appraisers have presented this valuation in the following form:

I

Predicted net earnings		$3,000	
Building, replacement cost new	$25,000		
Accrued depreciation	5,268		
Building valuation			$19,732
Interest on original building investment, 10% of $25,000	$ 2,500		
Yearly sinking - fund item to return $25,000 in 40 years at 4%	263	2,763	
Residual land returns		$ 237	
Land valuation at 7 percent			3,386
Total valuation			$23,118

In Valuation "H" the valuator has assumed a new purchaser and has attempted to recover his investment at the end of the life of the building. The building valuation, however, was made to depend upon the actual age of the building and an estimate of its total life, neither of which items would have much direct consideration from a purchaser. In Valuation "I" a new purchaser is not assumed and the entire calculation represents a phase in the financial status of the original owner. Of course valuation must presuppose a purchaser. That is what valuation means: the determination of the price which a purchaser is justified in paying. Hence Valuation "I" is really not an appraisal.

The sinking-fund method of depreciation deducts an allowance for deprecia-

tion exactly the same way that operating expense items are deducted. The amount of the deduction, namely the amount required as a yearly contribution to the sinking fund, depends solely upon the prediction of remaining life and the value which has been ascribed to the building.

The defects of the sinking fund method are many. It will be immediately apparent that it has many of the characteristics of the straight-line method. As in the case of the straight-line method, the sinking-fund method proceeds directly to a valuation of the building. It ignores the fact that appraising presupposes a purchaser and that the valuation must be made at a figure which the net earnings can support including a return of capital equal to the successive losses which anticipated depreciation and obsolescence will occasion. The method includes, in effect, the use of an expense item based upon the answer.

Furthermore, in the cases of all midlife buildings, the process makes the building value equal to the replacement cost of construction less an amount representing accrued depreciation based on the age of the building, an adopted rate of interest accumulation, and an estimate of the probable total life of the building. It has been indicated that past events do not determine values and that a process of depreciation which must or does use the specific age of a building cannot be accepted as sound procedure.

The sinking-fund method requires the process of appraisal to make the land valuation residual under the actual encumbering building, regardless of the degree to which it represents the highest and best use of the land, or it requires recourse to the summation method of valuation.

The first alternative, making land residual under the actual building, can lead only to the most absurd types of calculation. For illustration, consider Valuation "H" above. Presume that, because of changes in the quality of the district and the erection of many modern competitive buildings, the valuator predicts that future net earnings cannot be expected to average $3,000 but will be only $1,600. The process leads the appraiser into this calculation:

J

Predicted net earnings		$1,600	
Building, replacement cost new	$25,000		
Accrued depreciation	5,268		
Building valuation			$19,732
Interest on Bldg. value at 10%	$ 1,973		
Yearly sinking-fund item	474	2,447	
Residual land returns (Deficit)		**$ 847**	
Land valuation at 7 percent			... ?
Total valuation			... ?

The other alternative, to make a summation appraisal, likewise leads to difficulty. It does not warn the appraiser with respect to the serious errors possible. Such a valuation, where the sinking-fund method is used, involves no consideration of the earning capacity and might take the following form:

K

Building replacement cost new	$25,000	
Accrued depreciation	5,268	
Building valuation		$19,732
Land valuation (by comparison)		20,000
Total valuation		$39,732

Again, the sinking-fund method is almost always applied to an appraiser's estimate of the average yearly net earnings of the property throughout its entire remaining life. Invariably the appraiser has assumed the building income to be in the form of a series of yearly returns, equal and identical, to the termination of the building life. From this income he deducts the series of level yearly items representing the contributions to the sinking fund, and

is left with a series of level yearly amounts which are allocated to interest on the investment in the building. Inasmuch as the actual value of the building declines while the amount of interest remains constant, the rate of return on the building is assumed to increase throughout the life of the building, in much the same way it does when the straight-line method is used.

Some declare that the implication of a constantly increasing rate is not involved in the sinking-fund method because the rate is constant on the original investment and the sinking-fund device is used only to maintain that original investment at par. And of course this is quite true. The motive which might cause owners to deduct depreciation items and accumulate them in a sinking fund is the desire to replace the building at the end of its life, or at least to have back the capital originally invested in the building.

Several objections apply. Depreciation items are not set aside in sinking funds by owners. Buildings are not rebuilt by means of such funds. When a building depreciates to a point where it is valueless an owner simply removes it and utilizes the remaining land as best he can. In practice, the capital invested in a building is recovered in part or entirely in installments *during* its life, not in a lump sum at the end of its life; or else it is lost or recovered through sale to a purchaser. An owner, in theory, might recover his original investment at the end of the life of a building by means of a sinking fund. In practice, this is done so rarely that it appears improper to use the device in realty valuation.

In the final analysis, the sinking-fund method violates fundamental appraisal premises and is not an appraisal method but, rather, a form of managerial policy. It requires the introduction into valuation of another form of outside investment which is not in any sense a part of the real estate. The sinking fund happens to be owned by the same individual and is a part of his program for the maintenance of his capital. But it is not a part of the property sold. And valuation must proceed on the presupposition of a purchaser.

As a process it is less conservative than the straight-line method. That is, it produces total valuations which exceed those secured by the straight-line method. In either process building valuations are identical and the higher total valuations produced by the sinking-fund method place the additional value in land.

Of course the reason why the sinking-fund method renders a higher valuation than the straight-line method is because it permits accretions derived from an outside investment to reduce the portion of the net income which has to be allocated to the purpose of securing a return of capital.

In earlier years the amounts available in the sinking fund are comparatively low in amount and the major portion of the return of capital is accomplished toward the end of the life of the building. That is, the sinking fund grows by geometric progression and the absolute amount of the accretions increase at more and more rapid paces as time passes.

The most significant characteristic of the sinking fund method, and the one which precludes its practical application to realty valuation, is that no actual return of capital can be taken during the life of the building because all the sinking fund must remain intact throughout the building life in order to secure a complete return of capital.

One fascination this method seems to have for many persons is the fact that it has been found useful in certain other

financial fields in connection with the conservation of the total value of a group of investments. If a corporation has a multiplicity of investments in depreciable assets of various kinds, and if, as it will have, it has the requirement that the total value of its combined assets must be maintained at a constant level, it is quite proper for it to adopt and use the sinking-fund device as a part of its managerial policy. Constantly a portion of the total earnings produced by the various assets are being placed in a sinking fund. Periodically the proceeds of the sinking fund are reinvested in new assets. The entire group of original assets is gradually replaced by new ones and the value of the assets of the corporation is kept intact.

But in the case of real estate valuation we do not have this problem. The problem is solely the recovery of the capital invested in buildings. In fact the very reason why we discuss depreciation procedure is because we recognize that capital invested in buildings *cannot be maintained intact.* A process designed to accomplish such an end goes beyond the appraisal function which is solely to secure *recovery* not *maintenance* of capital.

Methods Which Discount Future Returns Directly

In those valuation methods which discount predicted future returns directly, the appraiser commences by making a forecast or estimate of future net returns to be derived from ownership of the property. He then determines the present worth of the future earnings to arrive at a valuation.

There are two such methods. The first may be described as the straight-annuity method; the second is the declining-annuity method. Both methods involve a prediction of probable future returns and direct discounting. They differ only in that the straight-annuity method assumes future building returns to continue at approximately the same level in all future years to the end of the useful economic life of the building while the declining-annuity method expects future building returns to decline gradually until they are *nil* at the end of the life of the building.

These methods are sound in theory and are applicable to the valuation of real estate. The second, or declining-annuity method, is adaptable to the practical valuation of buildings.

Straight Annuity Method

First we describe and discuss the straight-annuity method. Many appraisers apply it to the valuation of buildings. In using the process the valuator makes a prediction of probable average annual net earnings to be produced by the property from the present time to the time when he believes the building will come to the end of its useful life. He describes the earning expectancy as a level annuity running for the period.

Next he determines whether the building or land returns, not yet differentiated in the prediction of total earnings, should be made residual. In most cases the building returns are residual. There is only one case in which land returns are residual, namely, when the building is new and the highest and best use of the site. In the general case, the land is appraised and annual land returns determined and deducted from the total returns to secure the yearly amount representing the predicted building returns. Then the building returns are discounted directly to secure the building valuation.

For example, if annual net returns are expected to average $4,000 per year throughout a 40-year period represent-

ing the remaining life of the building, the valuation might appear as follows:

L

Predicted net earnings	$4,000	
Land valuation (by comparison, etc.)	20,000	
Land returns at 7 percent	1,400	
Residual building returns	$2,600	
Building valuation: Present value of an annuity of $2,600 per year, 40 yrs. at 10%		25,426
Total valuation		$45,426

Or, to show the form which the straight-annuity method takes when the building is new and represents the highest and best use of the land, we might have had the following valuation:

M

Predicted net earnings	$4,000	
Replacement cost of building		$25,000
Annuity for 40 yrs. which, at 10%, has a present value of $25,000	2,556	
Residual land returns	1,444	
Land valuation at 7 percent		20,629
Total valuation		$45,629

The process modifies the building valuation when different lives are predicted. This does not occur in the straight-line method or the sinking-fund method. In Valuation "L" above, if the quality of construction and other conditions were such that the appraiser felt justified in ascribing a 25-year life instead of a 40-year life, the valuation would have been as follows:

N

Predicted net earnings	$4,000	
Land valuation		$20,000
Land returns at 7 percent	1,400	
Residual building returns	$2,600	
Building valuation: Present value of an annuity of $2,600 per year, 25 years, at 10%		23,600
Total valuation		$43,600

No modification in method is necessary when the building is in mid-life. Let us assume we are appraising the above 40-year building at the beginning of its 16th year of life and that it is expected to have a remaining useful life of 25 years. Because older, the earnings may now be at the rate of $3,000 yearly. Such a valuation may be summarized in this manner:

O

Predicted net earnings	$3,000	
Land valuation		$20,000
Land returns at 7 percent	1,400	
Residual building returns	$1,600	
Building valuation: Present value of an annunity of $1,600 per year, 25 yrs. at 10%		14,523
Total valuation		$34,523

The depreciation problem, that is, the return of capital invested in buildings, is solved in the straight-annuity method. A purchaser has been presupposed and the valuator has determined, in Valuation "O," that he is warranted in paying $14,523 for the building. Does the yearly building return of $1,600 provide for a return of the purchaser's outlay of $14,523 during the life of the building as well as the 10 percent interest return which was necessary to induce the purchaser to buy? It does. This is most readily indicated in the table opposite.

During the first year the owner had $14,523.20 invested in the building. Inasmuch as a 10 percent return was necessary to induce him to buy, he must collect $1,452.32 out of earnings the first year. But the total predicted net earnings during the first year amount to $1,600.00, so that there is a remainder of $147.68 which the owner receives. This is considered as a return of capital and is therefore deducted from the initial investment in the building. Consequently, the owner has only $14,375.52 invested in the building during the second year. The $147.68 which has been returned to him is permanently out of the deal. He has the privilege of spending it, of reinvesting it, or of saving it; it is no longer an element in the valuation problem.

During Year	*Yearly Bldg. Return*	*Interest at 10%*	*Return of Capital*	*Unrecaptured Bldg. Investment*
0	....	....	....	$14,523.20
1	$1,600	$1,452.32	$ 147.68	14,375.52
2	1,600	1,437.55	162.45	14,213.07
3	1,600	1,421.31	178.69	14,034.38
4	1,600	1,403.44	196.56	13,837.82
5	1,600	1,383.78	216.22	13,621.60
6	1,600	1,362.16	237.84	13,383.76
7	1,600	1,338.38	261.62	13,122.14
8	1,600	1,312.21	287.79	12,834.35
9	1,600	1,283.44	316.56	12.517.79
10	1,600	1,251.78	348.22	12,169.57
11	1,600	1,216.96	383.04	11,786.53
12	1,600	1,178.65	421.35	11,365.18
13	1,600	1,136.52	463.48	10,901.70
14	1,600	1,090.17	509.83	10,391.87
15	1,600	1,039.19	560.81	9,831.06
16	1,600	983.11	616.89	9,214.17
17	1,600	921.42	678.58	8,535.59
18	1,600	853.56	746.44	7,789.15
19	1,600	778.92	821.08	6,968.07
20	1,600	696.81	903.19	6,064.88
21	1,600	606.49	993.51	5,071.37
22	1,600	507.14	1,092.86	3,978.51
23	1,600	397.85	1,202.15	2,776.36
24	1,600	277.64	1,322.36	1,454.00
25	1,600	145.40	1,454.60	....
			$14,523.20	

Inasmuch as the investment in the building amounts to $14,375.52 during the second year, it must earn 10 percent, or $1,437.55. Again the anticipated net income is $1,600.00, so there is $162.45 available over and above interest. This is the return of capital in the second year and is deducted from $14,375.52 to determine the amount which remains invested during the third year.

At the end of 25 years the sum of all the capital returns, made in yearly installments, is $14,523.20, the amount which the presupposed purchaser invested in the building. He has secured a complete return of his capital investment. He has had a 10 percent interest return on the portions of his capital which remain invested in each year.

It may be pointed out that this process does not provide for the accumulation of a fund equal to the original investment to be available *at the end* of the life of the building. It provides for the return in installments *during* the life. In this respect it has the characteristics of the straight-line method rather than the sinking-fund method.

When this method is applied to the valuation of buildings it is open to some criticism. It assumes that a building depreciates very slowly in early years and with considerable rapidity in late years. That is, it has a tendency to give values in excess of those which appear to be reasonable. Furthermore, the method assumes that tne earning capacity of a building will remain at about the same level throughout its life. Of course this is the defect which makes the method give the unacceptably high initial and mid-life values. This defect, the assumption of approximately level income throughout the building life, is common to the straight-line method, the sinking-fund method, and the straight-annuity method.

Declining Annuity Method

The other method which directly discounts future returns attempts to remove this difficulty. It does so by introducing the assumption that the future net earnings allocated to the building will decline in some manner throughout the life of the building until they are zero at the end of its economic life.

The assumption has merit because building returns actually do decline during a building's life. Such a decline is precisely the effect which results from depreciation and obsolescence. All the methods discussed to this point assume level earnings *and* the occurrence of depreciation and obsolescence. Both assumptions cannot be simultaneously valid. The second assumption, the occurrence of depreciation and obsolescense, is proved valid by common ob-

servation. Therefore the first assumption must give way to some modification.

In using the declining-annuity method, the valuator makes a prediction of the probable net earnings. In this method the earnings are expected to exhibit successive declines from year to year throughout the life of the building. This is much less arbitrary than to assume level annual earnings. If a building were actually expected to have constant earnings it is inconceivable that its life could come to an end. Buildings come to the end of life when they are no longer capable of producing returns. Hence the prediction of declining earnings is strictly in accord with the very problem, namely, the making of provision for depreciation and obsolescence. These forces can destroy value only by impairing earning power.

Of course no appraiser can possibly predict future returns year by year into the future, nor can he predict precisely in what year the end of economic life will occur. He can, however, make a very plausible prediction of probable earning power during the next ensuing year. Then if he does predict a remaining life (which is common to all the methods of depreciation) he has established two points on the curve representing the future income. The first point is the first year's net income which is assumed to accrue at the end of the first year. The other point is the building income in the first year after the expiration of the life of the building. In that year the building return must be zero.

Any smooth, plausible, declining curve which connects these two points may be considered to represent a more plausible earning expectancy than one which forecasts a level income for the entire term of years. In describing such an earning expectancy it is only necessary to make an estimate of the probable total net earnings in the first year following the date of appraisal to declare a reasonable and probable remaining life for the building, and to indicate the curvature of the income stream from its first year level down to the level representing land returns only.[2]

Next the appraiser determines whether the building or land returns are to be residual. In most cases building returns are residual. There is only one case in which land returns are residual, namely, when the building is new and the highest and best use of the site. In the general case, the land is appraised and annual land returns determined and deducted from the total returns anticipated in the first year, thereby securing the amount representing the predicted building return during the first year. The declining annuity to be appraised is the one commencing with this building return and declining to zero at the end of the life of the building.

For example, if the total net return during the first year is expected to amount to $4,000 and if the building is expected to have a remaining useful life of 40 years, the valuation might appear as follows:

P

Predicted net earnings, 1st year	$4,000	
Land valuation		$20,000
Land returns at 7 percent	1,400	
Residual building return, 1st year	$2,600	
Building valuation: Present value of annuity declining from $2,600 in 1st year to zero after 40 years, at 10%		21,683
Total valuation		$41,683

Or, to show the form which the declining-annuity method takes when the building is new and represents the

[2]In the examples below I have used Premise 3 incomes, described in *The Valuation of Real Estate* by the author, 1932.—AUTHOR.

highest and best use of the land, we might have had the following valuation:

Q

Predicted net earnings, 1st year	$4,000	
Replacement cost of building		$25,000
Amount for 1st yr. in a declining annuity for 40 yrs. which, at 10%, has a present value of $25,000	2,998	
Residual land returns	$1,002	
Land valuation at 7 percent		14,314
Total valuation		$39,314

The process modifies the building valuation when different lives are predicted. This does not occur in the straight-line method or the sinking-fund method. It does occur, however, in the straight-annuity method. In Valuation "P" above, if the quality of construction and other conditions were such that the appraiser felt justified in ascribing a 25-year life instead of a 40-year life, the valuation would have been as follows:

R

Predicted net earnings, 1st year	$4,000	
Land valuation		$20,000
Land returns at 7 percent	1,400	
Residual building return, 1st year	$2,600	
Building valuation: Present value of annuity declining from $2,600 in 1st yr. to zero after 25 years, at 10%		17,970
Total valuation		$37,970

No modification in method is necessary when the building is in mid-life. Let us assume we are appraising the above 40-year building at the beginning of its 16th year of life and that it is expected to have a remaining useful life of 25 years. Because older, the earnings may now be at the rate of $3,000 during the ensuing year. Such a valuation may be summarized in this manner:

S

Predicted net earnings, 1st year	$3,000	
Land valuation		$20,000
Land returns at 7 percent	1,400	
Residual building return, 1st year	$1,600	
Building valuation: Present value of annuity declining from $1,600 in 1st year to zero after 25 years, at 10%		11,059
Total valuation		$31,059

The depreciation problem, that is, the return of capital invested in buildings, is solved in the declining-annuity method. It was also solved in the straight-annuity method but that method contained a false premise with respect to the continuity of building returns and therefore somewhat over-appraised buildings. That the declining-annuity method solves the depreciation problem can be demonstrated in exactly the same way.

In Valuation "S" the appraiser has indicated that he believes a purchaser is justified in paying $11,059 for the building. Does the series of building returns commencing with $1,600 in the first year and declining to zero at the end of the 25-year period provide for a return of the purchaser's outlay of $11,059 as well as the 10 percent interest return which was necessary to induce the purchaser to buy? It does. This is most readily indicated in table on page 288.

This method provides for the return of capital in exactly the same way that the straight-annuity method does—in installments *during* the life of the building, not in a lump sum *at the end* of the period. It assumes that a building depreciates at a somewhat faster rate than the rate in the straight-annuity method. Therefore it is not subject to the principal criticism leveled against that method.

Characteristics of the Several Methods

The several methods may be compared by using seven tests. These may, for this purpose, be put in the form of questions and answers.

During Year	*Yearly Bldg. Return*	*Interest at 10%*	*Return of Capital*	*Unrecaptured Bldg. Investment*
0 ..	....	....	....	$11,058.72
1 ..	$1,600.00	$1,105.87	$ 494.13	10,564.59
2 ..	1,558.92	1,056.46	502.86	10,061.73
3 ..	1,516.40	1,006.17	510.23	9,551.50
4 ..	1,472.40	955.15	517.25	9,034.25
5 ..	1,426.86	903.43	523.43	8,510.82
6 ..	1,379.72	851.08	528.64	7,982.18
7 ..	1,330.93	798.22	532.71	7,449.47
8 ..	1,280.43	744.95	535.48	6,913.99
9 ..	1,228.17	691.40	536.77	6,377.22
10 ..	1,174.08	637.72	536.36	5,840.86
11 ..	1,118.09	584.09	534.00	5,306.86
12 ..	1,060.15	530.69	529.46	4,777.40
13 ..	1,000.17	477.74	522.43	4,254.97
14 ..	938.10	425.50	512.60	3,742.37
15 ..	873.86	374.24	449.62	3,242.75
16 ..	807.36	324.28	483.08	2,759.67
17 ..	738.54	275.97	462.57	2,297.10
18 ..	667.31	229.71	437.60	1,859.50
19 ..	593.59	185.95	407.64	1,451.86
20 ..	517.29	145.19	372.10	1,079.76
21 ..	438.31	107.98	330.33	749.43
22 ..	356.58	74.94	281.64	467.79
23 ..	271.98	46.78	225.20	242.59
24 ..	184.42	24.26	160.16	82.43
25 ..	93.80	8.24	85.56	....
			$11,058.72	

1. Does the method commence with a valuation of the building or does it commence with a prediction of probable future net income? If it starts with a building valuation it cannot properly be applied to the appraisal of buildings in mid-life or late life. It cannot be applied to new buildings which are over- or under-improvements. That is, if the process requires the appraiser to begin with a building valuation, the method cannot take care of the most general and frequent cases of valuation—those in which the building returns have to be the residual remainders of total returns after deducting land returns. To qualify under this test the acceptable method must commence with a forecast of probable future net earnings.

2. Does the method assume the flow of future building returns to be at a constant rate and equal in each year throughout the remaining life? Or does the method assume the future building returns gradually to decline until they are zero at the end of the life? If the process assumes constant building returns, it is based on a false premise and ignores the unrefutable contention that the destruction of value takes tangible form in the progressive decline of income. To qualify as sound procedure the acceptable method must anticipate that future building returns will decline.

3. Does the process require the valuator to make a prediction of the remaining useful life of the building? None of the methods avoids this factor. All the methods use the forecast of remaining life with the possible exception of the reducing-balance method which fallaciously assumes that, while a building's value declines, it never disappears. This test is therefore of little use in determining which method is the most acceptable procedure.

4. Does the method provide for a return of the purchaser's capital investment in the building in a lump sum at the end of the life of the building? Does it return the capital in installments during the life? Or does it fail to make a complete return of capital? Theoretically either of the first two alternatives is tolerable. In practice, however, owners do not secure the return in lump sums at the ends of the periods. They collect it, if at all, in installments during the period. In valuing a building the process must provide for a complete return of capital. Therefore, to qualify under this test the acceptable method must make a complete return of capital and must do so in installments during the remaining life of the building.

5. How many interest, capitalization, or depreciation rates does the

process require? Does it use one capitalization rate for the building valuation? This would be simplest. Does it use a combination of rates of interest? Does it use one interest rate and a rate of depreciation? Or does it use one interest rate and several different rates of depreciation? This test is not vitally important but, all other factors being equal, that method which uses the single capitalization rate is simplest and therefore to be considered as preferable.

6. In what manner and at what rate does the method assume the recovery of capital to take place? At a constant rate? At an arbitrarily variable rate? At an increasing rate? At an increasing and then decreasing rate? Or at a decreasing rate? The only essential is that the recovery of capital must not have to be at too great a rate in the final years of life. We cannot assume that building returns in sizable amounts will be available for the purpose in the late life of the building. To qualify under this test the acceptable method must show a major portion of the return completed before the final years.

7. What trend of value does the method assume the building to follow during the years of its useful life? Does the process assume the value of the building to decline as a straight line throughout the life? Does it assume a rapid rate of decline in early years and a slow rate in late years? Does it assume a slow rate in early years and a rapid rate in late years? Or does it assume a slow rate in early years, a reasonably rapid rate in mid-life, and a slow rate in late life? It is probable that the last assumption is the most plausible and that that method best qualifies under this test which most nearly follows the trend described as a slow decline in early years, more rapid decline in mid-life, and a slow decline in the concluding years.

Page 292 presents a tabulation of the seven tests and indicates the characteristics of the various methods of valuation. The declining-annuity method is the only one which qualifies under all the tests.

The arguments which support the use of the declining-annuity method as opposed to all the others may be summarized thus:

1. Valuation should start with an income prediction, not a building valuation. Under this test, only the straight-annuity method and the declining-annuity method qualify.

2. Valuation should recognize that building returns will actually decline throughout the life of the building. Under this test only the declining-annuity method qualifies.

3. All methods require the making of a prediction of the remaining useful life of the building.

4. The return of capital invested in a building should be complete and should be in installments during the life of the building and at a rate paralleling the decline in the value of the building. All the methods accomplish this except the reducing-balance method which fails to make a complete return of capital and the sinking-fund method which delays the recovery until the end of the building life.

5. Convenience and simplicity indicate that but a single capitalization rate is preferable. Only the straight-annuity method and the declining-annuity method qualify under this test.

6. The method should not require a large portion of the recovery of capital to be delayed until late life. Two methods qualify under this test: The sum-of-years'-digits method (when made to do so) and the declining-annuity method.

7. It is probable that buildings decline but little in value during the early

years of life and, again, but little toward the end of life. That is, most buildings appear to go through a period in mid-life when they lose value at their most rapid rates. This trend may be injected into the weighted-rate method. It is an inherent characteristic of the declining-annuity method.

The declining-annuity method meets all the conditions required and is the only one which qualifies under more than four of the seven tests. It is therefore presumed that it represents the proper method to pursue in the valuation of buildings.

Division of Opinion among Valuators

Except for the common confusion between cost and value, there is probably no phase of valuation procedure on which appraisers hold more diverse views than that which concerns the procedure to be followed in making allowances for depreciation and obsolescence. Because the several available methods do produce such divergent results it is proper that the opinions presented by various authorities be reviewed and compared. This is not done in a spirit of criticism but with a sincere desire to indicate that views are divergent and to emphasize the necessity for skepticism on the part of students of appraisal procedure. This is one field in which the determination of sound method cannot be based upon the weight of authority.

Few indeed are the authorities who use, or in fact mention, the declining-annuity method. Most of the authorities have adopted typical accounting procedure and adapted it to the valuation problem. The straight-line method of depreciation is still the most commonly used. Next in popularity comes the sinking-fund method. Then comes the straight-annuity method. Least-used and least-understood among our appraisers is the declining-annuity method. Following paragraphs indicate the divergence of views among authorities who have presented their thoughts in more recent literature.

John P. Hooker used the straight-line method in his paper, "Financial History of a Chicago Property."[3] Evidently he presented the amounts which the accountants had actually charged off to return the actual investment originally made. In other words he made no approach to a valuation process and was content simply to challenge the feasibility of attempting to forecast future earning expectancies.

Horace F. Clark's book[4] describes the straight-line method, the sinking-fund method, and the reducing-balance method. It offers no clue as to which he considered correct procedure and gives the reader the impression that it makes little difference. Ivan A. Thorson expresses a similar thought in his recent article[5] and even declares, "In many instances a 'straight-line' charge-off is to be preferred." Thorson's heretofore consistent adherence to the sinking-fund type of approach indicates that his apparent indifference to the importance of detailed method cannot be accepted as his serious conclusion.

There are others who have recommended the use of the straight-line method. The assessors who have worked out methods for wholesale valuation for taxation purposes have usually adopted straight-line depreciation. Zangerle, Prouty, and others find it the only feasible process which combines simplicity and popular acceptance. Kniskern finds a place for the method in his procedure although he does not use it in determining deductions from

[3]The Journal of the American Institute of Real Estate Appraisers, July, 1933. Vol. I, No. 4.
[4]*Appraising the Home*, 1930.
[5]The Journal of the American Institute of Real Estate Appraisers, January, 1934, page 116.

income but only to compute the accrued depreciation in his "physical valuation." Even in this application he suggests the use of "justified unit value"—a replacement cubic-foot cost unit with accrued depreciation already deducted.

John A. Grimes and William H. Craigue[6] recommend the use of sinking-fund devices but do not specifically apply the processes to real estate valuation. Thoroughly committed to reliance upon income as the basis of all valuation, they introduce the presumption of constant and uniform earning capacity to be maintained by means of the sinking-fund method and present a management policy rather than a valuation process.

Ivan A. Thorson[7] uses the ordinary sinking-fund method. He treats each portion of the total investment in depreciable assets, such as the structure, furniture, refrigeration, etc., separately by assigning different lives to the several portions. He is one of the few who presents a complete and consistent theory which is logical and self-contained. We declare his use of the sinking-fund method to be inapplicable to building valuation but commend him for stating a complete theory.

Another adherent to sinking-fund procedure is Joseph B. Hall. However, he has not had occasion to express himself since the declining-annuity method was proposed. His appraisal philosophy is such that he could find it entirely compatible with the conditions of the problem.

Philip W. Kniskern[8] makes use of the straight-line method, the sinking-fund method, and the straight-annuity method. His book recommends the straight-line method (pp. 292-296, 438) but it is used only in connection with the estimate of "justified physical value." The straight-annuity method is recommended on pages 416-418, 431, and 433. The sinking-fund method is recommended on pages 385, 423, and 424. It is declared that the sinking-fund method is not applicable to real estate valuation on pages 382, 383, and 459. Choice between the sinking-fund method or some other method (described as a "simple return") is given on pages 254 and 324. It is probable that he desires the straight-annuity method to be used in the valuation of predicted net earnings and the sinking-fund method to be used to determine amounts to deduct as expense to meet future major betterment programs and other purposes involving large outlays at specific future times.

At least five of our appraisers have definitely committed themselves to the declining-annuity method. Henry A. Babcock first presented the device in the demonstration valuation of the "Wisconsin Building."[9] The present writer has embraced the method and applied it to building valuation. He presents tables giving the present values of declining annuities at various rates from 7 percent to 15 percent in his recent book.[10] Cuthbert Reeves subscribes[11] to the annuity method with definite provision for a declining series of building returns. Roy E. Burroughs accepts[12] the method. Ayres J. DuBois has approved and recommended the use of the declining-annuity method for a number of years and has described it repeatedly in his articles. In fact he has adequately covered the same ground as this paper in a masterly chapter written in 1931.[13]

[6] *Principles of Valuation*, 1928.
[7] *Essentials of California Real Estate Practice*, 1929, and "Relation of Value to the Purpose of the Appraisal," in The Journal of the American Institute of Real Estate Appraisers, January, 1933. Vol. I, No. 2.
[8] *Real Estate Appraisal and Valuation*, 1933.

[9] *Appraisal of the Wisconsin Building*, distributed by the Appraisal Division of the National Association of Real Estate Boards, 1930.
[10] *The Valuation of Real Estate*, 1932.
[11] *The Capitalization Method in the Valuing of Homes* in the *Journal of The American Institute of Real Estate Appraisers*, January, 1934. Vol. II, No. 2.
[12] *An Appraisal of an Appraiser's Proposal* in the *Journal of the American Institute of Real Estate Appraisers*, July, 1933. Vol. I, No. 4.
[13] *Depreciation, Deterioration, and Obsolescence in Real Estate Appraisals*, published by the National Association of Real Estate Boards, 1931.

	Methods Which Use a Rate of Depreciation				Methods Which Use Sinking Funds	Methods Which Discount Future Returns Directly	
	Straight Line Method	Weighted Rate Method	Sum—Yrs' Digits Method	Reducing Balance Method	Sinking Fund Method	Straight Annuity Method	Declining Annuity Method
1. Valuation Method:							
a. Starts with building valuation	XXXX	XXXX	XXXX	XXXX	XXXX	----	----
b. Starts with income prediction	----	----	----	----	----	XXXX	XXXX
2. Income is Assumed to be:							
a. Constant during building life	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	----
b. Declining throughout life	----	----	----	----	----	----	XXXX
3. Method Requires Prediction of remaining useful life of building	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
4. Return of Capital is:							
a. In a lump sum at end of life	----	----	----	----	XXXX	----	----
b. Not accomplished by method	----	----	----	XXXX	----	----	----
c. In installments during the life	XXXX	XXXX	XXXX	----	----	XXXX	XXXX
5. Kind and Number of Rates Used:							
a. One capitalization and one depreciation rate	XXXX	----	----	XXXX	----	----	----
b. Two capitalization rates	----	----	----	----	XXXX	----	----
c. One capitalization and several depreciation rates	----	XXXX	XXXX	----	----	----	----
d. A single capitalization rate	----	----	----	----	----	XXXX	XXXX
6. Recovery of Capital is at:							
a. A constant rate	XXXX	----	----	----	----	----	----
b. An arbitrarily variable rate	----	XXXX	XXXX	----	----	----	----
c. An increasing rate	----	----	or XX	----	XXXX	XXXX	----
d. A decreasing rate	----	----	or XX	XXXX	----	----	----
e. Increasing, then decreasing rate	----	----	----	----	----	----	XXXX
7. Trend of Building Value Decline:							
a. Straight decline	XXXX	----	----	----	----	----	----
b. Fast, then slow decline	----	XXXX	XXXX	XXXX	----	----	----
c. Slow, then fast decline	----	or XX	or XX	----	XXXX	XXXX	----
d. Slow, fast, then slow decline	----	or XX	----	----	----	----	XXXX

Theatre Appraisals

By LEON FLEISCHMANN

IN appraising or giving expert testimony on the value of a theatre or any public place of amusement, the appraiser is often asked the following questions as to the basis upon which an appraisal was established:

1. Was it based on a high or low market value?
2. What considerations entered into the sound value, depreciation, obsolescence, and other factors which enter into an appraisal of this particular type of real estate and not ordinarily considered for commercial buildings or dwellings?

In analyzing theatre properties there are many elements to be considered before one is enabled to establish what may be a fair and reasonable value, and this can only be determined by one who has had wide experience in appraising buildings of this character.

As far as any records are available, I cannot find that any set standards or empirical formuli have been established, for what appears to be definite in one case, will not always apply to the other, even though the structure be adjacent.

This article is not written with a view of establishing valuation for tax purposes required by a municipality such as New York City where many years ago the system known as "The Hoffman-Neal" or "Davis Rule" was adopted. Its purpose is to bring before the reader the many ramifications encountered in arriving at a definite conclusion.

During my twenty-seven years of construction designing and very close association with several of the largest institutions in the theatrical industry, I have been called upon to appraise many buildings of the type herein described in order to establish values commensurate with the purchase price, book value, sound value, and for various other purposes.

Much thought and consideration is being given to cubic foot costs. Cubic foot costs, when properly applied, may in many cases, be used as a check on intrinsic values, but the paramount factor is and should always be the *earning power*.

It is quite a common practice among architects and builders to estimate the construction cost of a theatre at an average cubic foot price. In my experience, I have found few frank enough to admit how this average unit price was arrived at, except to say that inasmuch as the cost of a certain building of a similar type was so much, the building under consideration being very similar should cost so much.

This contention, naturally, cannot apply; and experience has demonstrated to me that unless one establishes a definite unit price for almost every section or part of a building, a very great discrepancy must naturally follow. One could hardly consider establishing the same price per cubic foot for the stage section or the lobby of a theatre as that of the auditorium, despite the fact that the latter is invariably twice the size of the other. The same argument would apply in computing the auditorium with the unfinished space above same which encloses the roof trusses, and which, in many cases, is equal to approximately forty percent of the total cubical contents of the auditorium.

Strange as it may seem, there are many theatres very similar in design and construction, built under identical labor conditions, and where material prices were uniform, which varied as

much as forty percent in costs per cubic foot.

1. Design of structural steel.
2. Arrangement of seats.
3. Height of main ceiling.
4. Height of roof trusses.
5. Type of equipment.
6. Type of furnishings.

and any number of other conditions, none of which, except the seat spacing, add materially to the gross income of a theatre.

Reference may be made to the following schedule showing six various types of structures, and where the prices of both labor and materials were almost identical or varied slightly.

Of course, style, beauty, and elaborate furnishings can be considered in arriving at values, but these can only be appraised at their intrinsic value, thus bringing us down to the more important elements, some of which are:

1. If operated by one who produces his own production.
2. If operated by a tenant who may have a first run picture franchise.
3. If operated by a tenant who may have a second run picture franchise.
4. If operated by some theatre chain under a lease, on a profit-sharing basis.
5. If operated where the production includes stage shows.
6. Future prospects.
7. Purchasing power of neighborhood.
8. Zoning restrictions.

Year Built	*Type*	*Cubic Foot Price Const.*	*Cubic Foot Price Equip.*	*Cost Per Seat Const.*	*Cost Per Seat Furnishings*	*Cubic Contents*	*Seat Capac.*
1927	A	47½c	13½c	307.	86.50	2,000,000	3,100
1927	A	55c	13½c	368.	89.	2,400,000	3,600
1927	A	57½c	16½c	366.	105.	2,200,000	3,500
1926	B	33½c	10½c	183.	57.	1,200,000	2,200
1927	B	34¾c	8¾c	198.	50.	1,575,000	2,800
1927	B	52c	9¼c	235.	41.	990,000	2,300
1927	B	45½c	14½c	290.	92.	1,900,000	2,950
1926	C	40½c	10½c	220.	53.	1,340,000	2,500
1926	D	36½c	12c	161.	53.	1,150,000	2,650
1926	E	33c	11c	169.	56.	1,233,000	2,400
1927	F	28c	10c	149.	54.	1,140,000	2,150

CLASSIFICATION OF VARIOUS TYPES

A: Modern, highly ornamental, two balcony, air conditioned, de luxe seats.
B: Modern, ornamental type, one balcony, air conditioned, de luxe seats.
C: Modern, simple type, two balcony, air conditioned.
D: Modern, simple type, one balcony, not air conditioned.
E: Modern, simple type, no balcony, air conditioned.
F: Modern, stadium type, no balcony, air conditioned.

It must therefore be apparent without a question of a doubt that the cost of brick, mortar, and land should not be the only consideration given in the appraisal of theatres.

Much has been said by theatre experts both in favor of, and against, the large expenditures in the construction and equipment of what, in the industry, is generally known as the "De Luxe Houses," but when one defines the real object and purpose of any theatre, the most important factors can be summed up in the following manner:

1. A first class performance.
2. A nice comfortable seat.
3. A house well air conditioned, affording at all times good ventilation, whether it be during the winter or summer months.

9. Transit facilities.
10. Surrounding conditions.
11. Accoustical conditions.
12. Air conditioning conditions.
13. Depreciation and obsolescence.
14. Amortization.
15. General management.

Items numbers one to seven, inclusive, seem to be the most important factors, as they cover what might be considered a value difficult to establish by one not thoroughly familiar with theatre appraising, and even these items may vary greatly, depending entirely upon who the owner or tenant may be.

Now let us enumerate some of these important elements and then define some of the reasons why they must be considered in arriving at a final conclusion.

There can be no doubt that theatres owned and operated by large and efficient corporations, who make and exhibit their own product, have a far greater value than those operated by some small circuit or individual who at times may be compelled to take second or third run productions without the proper booking protection.

Booking protection principally applies to moving picture theatres, and means the time in which the second run theatre may show the picture after the first run, or the third run after the second run, etc., the lesser time always being of greater value.

The purchasing power of the neighborhood is an important factor as this will greatly influence the quality of entertainment that may be either obtainable or advantageous to offer to the public. This, however, may be somewhat overcome by its transit facilities.

Accoustical conditions and air conditioning must naturally be carefully considered as these are more important factors, especially the latter, in the summer time than in the winter when a greater variety of other types of amusements are more easily obtainable, such as automobiling, golfing, tennis, amusement parks, bathing, etc.

Let me, at this time, give the reader a definite and concrete case existing in one of our large cities. There is no better way in which I can demonstrate more clearly one of the many conditions which may arise and confront an appraiser in attempting to arrive at a fair and impartial value, whether the appraisal be for the sale of the building, the rental, or for any other purpose.

In the particular city to which I refer, there exist in the main business section two modern theatres, adjacent to each other, both constructed under the same conditions, fully-equipped in the most up-to-date manner and fully air conditioned, and both having all modern conveniences such as lounges, smoking rooms, etc.

Now each of these theatres is owned by a different theatrical corporation, each considered among the largest in the industry; both make their own productions and exhibit them in these theatres, and both theatres are operated in the highest and most efficient manner.

The cost of each of these structures is about the same, although both are of different style of architecture and furnishings; the one having a slightly larger seating capacity than the other, but both offer first run pictures and entertainment, the one of simpler style in architecture being made up in cost in furniture, fittings, etc.

Upon reading these conditions, one would almost come to the definite conclusion that the theatre having the larger seating capacity is the more valuable one. This, however, is not the case as the productions in the smaller house being of a higher type and quality provide the greater income, making the smaller house of greater value.

Now let us for a moment define obsolescence which might also be included in depreciation, both of which are, in many cases, items which must be given careful consideration.

Obsolescence may or may not be considered in arriving at valuations even though both buildings may be adjacent and have the same potentialities and land values. Obsolescence in the more modern type of theatre, constructed within the past eight or ten years, becomes a minor factor, and should not be seriously considered at the present time owing to existing conditions. Obsolescence in the older type of theatre, such as is known as the "two-balcony theatre," is one requiring careful con-

sideration. The real value of such types can only be established by the nature of its tenant or its past and estimated future earning power or potentialities.

The planning of one may be more or less obsolete than the other, but this might be more than overcome by its greater earning power. It must be apparent that all evidence which would be indicated by virtue of obsolescence, or any other similar circumstances, whether it be a theatre or other type, is in many cases much less than its replacement value after deducting physical depreciation.

Depreciation is an item that must also be carefully considered, especially where the location may have changed and competition has been created. This cannot be arbitrarily fixed at two and one-half percent although this figure has been quite prevalent in establishing values for either book value, insurance adjustments, or for tax purposes. It was only lately that the Court of Appeals in the State of New York held that the proper value to be attached to any building was not necessarily the replacement cost less depreciation.

The following table has been established by the writer from actual experience in the maintenance and up-keep of theatres, and applies to those known as legitimate theatres as well as movie houses. No definite amount which would apply to all theatres can ever be established as this depends upon the volume of business as well as the care of the property and its management, therefore a range is given on the more important items showing what might be considered the minimum and maximum.

SCHEDULE

Item	*Minimum* %	*Maximum* %
Seats	4	7
Drapes	9	16
Wall Coverings	4	10
Floor Carpets	14	20
Stair Carpets	18	26
Furniture	10	15

Depreciation on furniture should always be taken at a much higher value, and in many cases I have known where a figure of twenty percent per annum has not been excessive, depending entirely upon the management and upkeep. In many cases, large producing corporations have reduced the seating capacity by removing the upper balcony or gallery, modernizing the house, putting in first run productions, thus increasing its earning power and appraisal value.

In conclusion, may I again repeat that in so far as no definite, set standards or formuli have ever been established, it becomes a highly technical matter to reach a proper and fair appraisal valuation on buildings of this type.

An Appraisal That Went Sour

By Maurice F. Reidy, M. A. I.

"THE word 'appraisal' means a process or method by which is derived an opinion of the value of property."

This is the definition of the word "Appraisal" in the "Standards of Appraisal Practice" of the National Association of Real Estate Boards.

Let me enlarge upon that a bit—a Real Estate appraisal is a study of a particular piece of real property which before reaching the estimate of value, or the value conclusion, should take into consideration all the circumstances that affect that value. These circumstances, or features, of a particular piece of property, may be of a dual character, and might be said in many cases to be positive and negative, or plus and minus. This simply means that in addition to the obvious features, such as size and type of building, the square foot area, the cubic content, the reproduction cost, the rental rates, and the physical condition of the building, there may be many things that will add to or subtract from the value of that property.

Some properties have no negative features. These are the developments where the building is perfectly planned and is therefore the highest possible use the land could be put to, and where the land is the best possible location for that type of building.

Every appraisal is in some measure a problem. Perhaps the extreme examples of this in appraisal problems—and as an economic principle they apply somewhat to real estate—are the bag of gold and the cup of water. A bag of gold is a thing of great value ordinarily, but what is a bag of gold worth if thrown to a man drowning in the sea? It will hasten his sinking, it will bring to him a quicker death, and therefore, to him, it has no positive value. It is minus. A cup of water, ordinarily, is a thing of little value, but what is a cup of water worth to a traveler lost in the desert? It may save his life. Therefore the circumstances attending that situation give a priceless value to a thing ordinarily of little real worth.

These two examples are extreme, but they emphasize the principle in appraising—that there are more things entering into the finding of value than the mere reproduction of physical features of a property.

Abraham Lincoln would have made a splendid appraiser. He seemed to sense and to be able to express tersely things that affect worth or value.

He was once asked by letter from a brother attorney in another city to give an opinion of the worth of a certain lawyer who had an office near Lincoln. His answer was a letter that read something like this (I am quoting from memory):

> Dear Mr. Blank: You have asked me to give you my opinion of the worth of Mr. A. of this town. He has a wife and three children, these should be worth a hundred and fifty thousand dollars to any man. In his office he has a table and two chairs. There is also a large rat-hole in one corner of his office that will bear looking into. Yours truly, A. Lincoln.

There was an appraisal that gave proper weight to the circumstances of that man's worth. In a few words he showed that the only thing of value that man possessed, was something of sentimental or domestic worth for which there was no market or sales value. In delightfully ironic words, he listed the meagre physical assets, and then he told a volume when he mentioned the uncovered, open, conspicuous

rat-hole, because he showed the slovenly habits and the lack of ambition of the man and inferred that his future earnings were probably not to be any greater than his present capacity.

We have been through, or at least we have been experiencing if we are not through it yet, an intense period in the past fifteen years. Our whole national business system has been through a cyclonic experience. Commodities have risen and fallen tremendously in price, with the intensity of a tidal wave. Investment and speculative securities have risen and fallen in the same or comparative measure, and now the wave has receded.

Real estate, the commodity that represents about one-half the value of this nation's entire wealth, did not escape. It was drawn into the general speculative maelstrom. Ownership of many properties fell into incompetent, designing, gambling hands, and their proper use, investment, and occupancy, was subverted in many cases to entirely a gambling, quick profit-taking, temporary ownership.

The ordinary activity of most mortgage companies, insurance companies, savings banks, cooperative banks, and other loaning agencies, was affected somewhat by this hectic period; and in a great many cases, the usual conservative attitude of many of these agencies was a bit relaxed. The old principle in real estate economics, that a piece of land is worth what the owner can afford to pay for it for his own use was in some measure forgotten. There seemed to be also an attitude on the part of the speculator that the earnings of a property had no relation to the value. He mistook the term price to mean value, and now he has learned that speculation may raise prices, but does not raise values; and in the last analysis, a fully developed piece of income producing property is worth that price at which its earnings can safely be capitalized.

Let us not exaggerate the situation in respect to real estate. Except in one glorified small section of our country there was nothing like the fluctuation in prices of real estate that there was in most commodities or securities; in other words, our appraisals were not as wild as the other fellows. We didn't go quite to the extreme that they did. But appraisers and loaning agencies did transgress and did make mistakes, and did, in many cases make excessive loans. It is not quite enough to say that the speculative prices that obtained to such a wide extent misled the appraiser and the mortgage investor; it is probably much more accurate to say many loaning agencies were using the wrong methods of appraising. There was left out of appraisals, in many of these cases, some of the things that had an influence on value. Loaning agencies were making and accepting appraisals that were incomplete.

Fundamentals

The fundamentals of appraising would demand that appraisers should do more than was being done. The obvious things about a property—that is, the land and its worth, the size and condition of the building, and its rental schedule—were too much relied upon; and if we add to these, that the greatest factor in the grant of a loan at times, was the speculator's word as to cost of building and land, the speculator's own setup of rentals and expenses without careful analysis on the part of the appraiser and the mortgage investor, we will have stated the actual situation, not general of course, but wide enough in extent to be fairly representative.

Then too, as to many of the very large loans, there were the cases of Summation Appraisals. These are the loans granted upon the land value as

found by a real estate appraiser, added to the building reproduction estimate as found by an engineer or contractor, the sum of the two being supposed to indicate the actual value, but in many cases, being entirely inaccurate.

These are the cases where mere physical reproduction value was accepted, and where earnings and expenses were not sufficiently analyzed both as to the present and the future of the property. Another important value influence, the character of the ownership and the management, were not sufficiently weighed because competent, intelligent management of an income producing property is an absolute essential to its success, and management alone is often the factor that makes for the success or failure of a building.

The nicest apartment building, or any kind of renting property, in the hands of inexpert, sloppy, indifferent management, and especially where there is but a temporary ownership—the owner being interested only in reselling at a profit—is sure to reflect that kind of ownership and management by an increased vacancy percentage, by a gradual depreciation in the character of tenants, and these translate themselves into the dollar sign in the expense and income columns of that property at the end of the year.

A second class office building intelligently handled can be made a successful investment but only by the best kind of management. The real estate speculator cannot give it this although he seems to think in most cases that he can. It is probably fair to say that in cases of temporary, speculative, profit-seeking management the whole schedule of rentals for an apartment house or office building should be written down a substantial percentage.

For illustrative purposes I am taking one actual case of an appraisal and a loan, somewhat typical of the recent situation and exemplifying in the extreme the errors of omission. This appraisal was, therefore, incomplete and the loan granted was excessive. The owner, a speculator has since come to grief and the property just recently sold for less than the amount of the first mortgage. Its real value never was higher than the mortgage and a complete appraisal at the time would have established that.

The records of most loaning agencies, whether banks, insurance companies, or mortgage companies, will show similar loans with about the same or worse subsequent history. It is not only therefore a somewhat typical loan for the recent speculative period but it is a common experience inasmuch as few loaning agencies of any size have escaped making one or more like it.

Here is a brick, four story building, before remodeling, without elevators, more than 40 years old, located on a parallel street, distant about 250 feet from the main retail section and in a Massachusetts city of over 100,000 population.

Its previous use had been stores on the ground floor, some antiquated offices, some club rooms, and some small halls on the three upper floors. The stores had been fairly well rented at moderate rates, the upper floor renting history had been bad.

Busy times came, office space was scarce and second and third class space was temporarily renting at or near first class rates.

The owner decided to remodel the building and stated he was going to spend about $300,000. As a matter of fact it was sometime later established that he spent actually less than $150,000. He finished the work and applied for a mortgage. He wasn't satisfied

with what he could get from the local banks. From out-of-town sources he was granted and gave the first mortgage on the remodeled property for $290,000. The appraiser set a value on the property of $487,500—on the 9,350 square feet of land he set a value of $12 a foot, or $112,200, the building he appraised for $375,300. On this valuation a first mortgage loan of $290,000 was granted, which was about a 60 per cent loan based on the appraisal.

The appraisal was made just before the time the building was finished. Four out of the six first floor stores had been rented and about 40 per cent of the remodeled office space in the upper floors had been rented. This 40 per cent of the rentable office floor area that had been rented represented about 55 per cent of the schedule of rentals in dollars for the offices because the most desirable and highest priced space was engaged first.

Step-by-Step Analysis

Let us take this appraisal briefly; step by step:

The figure set on the land is probably a fair valuation. There was more than the average street frontage for the area—that is, there was no excess depth to the land, consequently there was no waste land. There was an alley on one side and in the rear. Its whole area was useable in its location and the comparison of its value with like land in the vicinity justifies the $12 a square foot value set.

In the check-up we found this building contained about 600,000 cubic feet.

This type of building with one passenger elevator, and practically all frame interior construction with brick outside walls and steel only in the elevator well and the stairways, could be built new at that time for about 34c per cubic foot. The entire building could be constructed new, therefore, for about $204,000. Add to this the full value of the land, $112,200, and we have a total physical reproduction value of $316,200. 60% of that amount would be $189,720. Yet the mortgage granted was $290,000. The actual cost to that owner, of land and old building and remodelling was just over $300,000.

It must be considered though that the exterior walls of the building which were not changed and that part of the frame inside structure that was not changed had suffered a physical depreciation in the 40 years of its life equal to at least 20% of the fair building valuation as remodelled. We take then 20% of the $204,000, and we have a depreciation of $40,800. Deduct this from the total value of $316,200 and we have a present physical value of the land and building of $275,400.

It is very evident that the cube content of this building was not accurately figured at the time or was not figured at all, or a very erroneous estimate of its cubic foot reproduction cost was used, because the appraiser set a valuation on the building of $375,300.

From the purely physical standpoint, the reproduction value of the land and building combined was only $275,400.

The Rents

The owner set up in his application his schedule of rents based chiefly on his desire. Four of the six stores were rented by the time the building was completed. The appraiser in his report submitted the rent schedule as presented to him by the owner. No analysis was made of competitive store locations in the same vicinity. This was an omission.

If this were made it would be seen that this schedule of rentals for the stores was nearly $75.00 a front foot more than tenants of competitive locations were paying.

This appraisal should have contained

an analysis of the probable future rentals of those stores, and any careful study of that business section would have written off of that store rental schedule 1/3 of the rent annually for a period of 10 years.

As an actual fact, two of the tenants in the stores later failed, and the actual store rental in that building today, five years after the building was completed, is 40% less than the original, excessive, unsound schedule.

Business at that time all over the country was at its height and many leases were being made at figures higher than now seem justified even for that time. This should have been taken into account, and if it had been, the income from the stores would have been figured at something over $17,000 a year instead of about $28,000 as scheduled.

The actual rental from the six stores today allowing a figure of 10% for vacancy each year, probably a fair allowance for that location, is close to $16,000.

Offices

Three upper floors were devoted to offices—some large, some small, some too large, and some too small. In other words, it was not a modern efficient plan due to the old construction.

The actual gross amount of rentable area, that is, the inside area of the offices leaving out service areas (hallways, toilets, stair wells, elevator, etc.) was about 18,000 square feet. The owner's schedule presented showed a rental possibility of this space of about $32,000 which is very close to $2 a square foot, a terribly exaggerated rate and impossible to realize.

The best office building in that city, fireproof, modern, on the main street, was averaging about $2 a foot for rentable space. The average rate for renting area in buildings of the character we are studying was not over $1.25 per square foot. But the times were hectic. Office space was scarce. It was difficult for office tenants to find decent locations, and many tenants were taking temporary locations at a higher rate than they were justified in paying because of the difficulty of finding space, and nearly all of them were taking short term leases—some, in fact, were refusing to take leases and were paying high rates under protest.

This was the situation in regard to this building. The total rental schedule then was about $60,000 as presented by the owner. A fair rental schedule, and what would be expected under ordinarily good times for a period of 10 years, should have been about $17,000 for the stores and $22,500 for the offices making a total of about $39,500 instead of $60,000.

The building was not well adapted for division into office space. Front offices in some cases had a depth of only 14 feet—a very awkward depth and one never met with in a modern building. Other rooms in the building had a depth running up as much as 28 feet.

It is pretty nearly a common experience in cities of the size where this building was located that for an office depth over 22 feet the rate of rental is much lower than the average rate for depths between 18 and 22 feet. The history of vacancies for these unusual depth offices is generally a worse one than in the average depth room.

A fair stabilization of rental for the kind of space that this building had to offer would have allowed at least a 15% vacancy for the office space. 15% of $22,500 is $3,375. So after allowing a 15% vacancy for the office space, we find a stabilized rental for the offices of $19,125. Add this to the $17,000 stabilized estimate for the stores, after

a 10% vacancy estimate, and we have an estimated stabilized rental for that complete building of $36,125 as an average for ten years.

Referring again to the Standards of Appraisal Practice of the National Association of Real Estate Boards. *Property* is defined as " all the rights to future benefits arising from ownership." *Value* is defined as follows: "The market value of a property at a designated date is that competitively established price which at that date represents the present worth of all the rights to future benefits arising from ownership."

The future benefits coming to the owner of that property obviously are the dollars that he could take each year, as the profit from its operation.

First, the useful physical life of the building should be estimated in years. Its useful life in years would only be that term of years for which it would return a profit to the owner.

At that time in its future when the profit from the building and the land would reach a point where it was less than the return from the land alone if the land were leased, then the building would be obsolete and be nothing but an encumbrance—a pile of bricks on the land.

For example: if in twenty years from the date of the reconstruction of that building the land would be worth in the estimate of an appraiser $200,000, and if the land could be leased at that time at a five per cent net return, say $10,000 a year; if then the property—that is, the land and building combined—was showing a less net profit than $10,000 a year, the building would have no economic value.

The analysis of the expenses, and I regret very much that the time does not allow for the details of this, would show that, if that building were capitalized at $290,000, only the amount of the first mortgage, the operating figure, income and expense, after depreciation is figured, after vacancy allowance is made and all other items that go into the fixed and operating charges, would show that the building was returning no profit.

Now this appraisal was incomplete from the standpoint of "Essentials of Mortgage Appraising" or of the "Fundamentals of Appraising," because there was left out or omitted from it many things that affected the value of the property, and if we are to learn from our recent experience, it must be evident that in appraisals, especially of income producing properties of any size, we must have more complete studies, must have all pertinent details; in short, we must be sure that *all* features affecting value are included.

Cincinnati Method of Establishing Reconstruction Costs of Dwellings

By Robert Heuck

A PUBLIC official whose duty it is to appraise for tax purposes is compelled to consider certain factors as essential in his work. Many of these a Realtor, who may be appraising an individual parcel for various and sundry purposes, need not respect.

Equalization and the uniform distribution of the tax burden among the owners of the type of wealth which by law is to be appraised, are fundamental in the mind of the official. This necessitates the use of a system or systems of appraising which, as far as humanly possible, will make all valuations relative and comparable to each other. A taxpayer must be able not only to judge the correctness of his own value, but be permitted to see all other valuations in order to establish the relative accuracy of his own assessment.

The next essential is speed. In Hamilton County in 1931 there were 237,000 parcels of land, and well over 180,000 structures of all kinds and descriptions, together with millions of dollars worth of equipment legally defined and interpreted as real estate. The appraisal could not start before April, and the duplicates and tax bills were to be ready December 1.

A third element entering into public appraisal is cost. The official charged with this work must realize that the expense of employing exclusively trained and qualified appraisers is prohibitive. The system to be used must be one in which gathering of information for official records is done by competent men who are not necessarily experienced appraisers. The University of Cincinnati, or Cincinnati method, of home appraisal operates with speed, a minimum amount of expert service, and results in an equalization visible and easily understood by the public.

The Cincinnati plan seeks to establish accurately, the reproduction cost of buildings. The law of the State of Ohio requires the appraising officer to value land and buildings separately. It further permits the taxpayer to complain and be heard by the Board of Revision and by the Tax Commission of Ohio without incurring any expense. Complaint may be made on either land or building, or their combined value.

The men who conceived and developed the Cincinnati method of appraising were firm in their belief that in any method of appraisal an accurate knowlege of the reconstruction cost of the building was essential as a basis for further computation or judgment.

Herman Schneider, former President of the University of Cincinnati and founder of the cooperative method of engineering training, now Dean of the College of Engineering, Commerce, and Applied Arts, was asked in 1924 to assist in the appraisal work of Hamilton County. He and Professor Ralph L. Langenheim, then of the University of Cincinnati, now Dean of Engineering at Tulsa University, Tulsa, Oklahoma, originally conceived and put into effect in 1925 the Cincinnati method of residential appraisal.

Dean Schneider had previously had the following personal experience in building. Some years prior, he and a neighbor built two houses on adjacent and similar lots, wherein the cost did not vary more than a few hundred dollars. Having no personal choice between the houses, although they were

slightly different in architectural design—the one having a front porch and the other a side porch—he determined to live in the one which might prove the least marketable. Much to his astonishment, the house with the side porch attracted by far the greater amount of public consideration, and therefore the higher price. This favorable position appeared to arise from a rather attractive ship's lantern which was placed at the entrance to the side porch, and it so happened that this particular house actually cost less than the other.

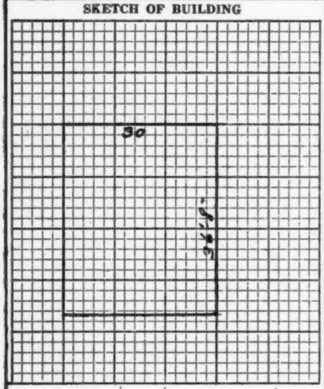
Later, when asked to give some thought to wholesale appraisal, he determined as an engineer to seek some method of appraisal which would establish reconstruction values on buildings that would not be affected by personal likes and dislikes. Dean Schneider is not unmindful of good architecture, and other things that might go into making a house attractive; as a matter of fact he is dedicating his life at the present time to the proper application of vari-

TABLE I

LOCATION OF BUILDING NO. 123 STREET XYZ CLASS 2

TYPE OF MAIN BUILDING		CONSTRUCTION		STORIES 1	ROOMS 5	NO. APT.	RENTAL $	VACANT
X	SINGLE DWLG.	WAREHOUSE		FRAME	GRADE		DEPRECIATION	
	DOUBLE DWLG.	SCHOOL	X	BRICK	1	HIGH CLASS-A	DATE BUILT 1925 REMODELED OWNER TENANT ESTIMATED OFFICE	11.5 %
	DUPLEX DWLG.	CHURCH		STEEL	2	HIGH CLASS	CONDITION: A-B-C-D-E	%
	APARTMENT	OFFICE		CONCRETE	3	GOOD	OTHER	%
	APT. WITH STORES	HOTEL		REINFORCED CONCRETE	4	CHEAP	TOTAL	11.5 %
	STORE	BANK		STONE				
	PUBLIC GARAGE	THEATER		METAL				
	FACTORY	FILLING STATION						
	CL'BS, LODG'S, GYMS	LOFT LIGHT MFG.						

SKETCH OF BUILDING



SIZE	STY.	SIZE	STY.
30 x 36'-8"	2		

ITEM	BUILDING DESCRIPTION	INDEX
1 FOUNDATION	CONCRETE X / STONE / BRICK / CEMENT BLOCK / PIERS	9
2 BASEMENT	FULL X / PART / SUB-BASEMENT / NONE / UNFINISHED; CEMENT FL. X / EARTH FL. / WOOD FL. / FINISHED NO. RMS.	8
3 WALLS	SIDING / SHINGLES / STUCCO-FR. / STUCCO-MAS. / STONE / REINF. CON; COM. BRICK / FACE BRICK X / BRICK VENEER / CEMENT BLK. / CONCRETE	30
4 ROOF	FLAT / PITCHED X / MANSARD	
5 ROOFING	COMPOSITION / ASPHALT SHINGLE / WOOD SHINGLE / ASBESTOS SHINGLE; SLATE / TILE X / METAL / CONCRETE	14
6 EXTER. TRIM.	PLAIN X / ORNAMENTAL / WOOD / STONE / TERRA COTTA; METAL / DORMER / BAYS—1 STORY / 2 STORY	18
7 INTERIOR FIN.	PINE X / HARDWOOD OR GUM / METAL / FIRE PLACE	18
8 FLOORS	JOIST / MILL / STEEL / REINFORCED CONCRETE; HARDWOOD 5 / PINE / COMPOSITION	10
9 ATTIC	UNFINISHED / NO. OF ROOMS FINISHED / NO ATTIC	
10 HEATING	HOT AIR / HOT WATER / STEAM X / VAPOR / STOVE	7
11 LIGHT	ELECTRIC X / GAS	3
12 PLUMBING	NO. OF BATHS 1 / TILE FLOORS 1 / TILE WALLS 1 / TOILETS; LAVATORIES / SEWER X / WATER X / GAS X	11.5
13 PORCHES	COVERED SQ. FT / UNCOVERED SQ. FT; ENCLOSED SQ. FT. / WOOD / MASONRY	
14 BUILT-IN GAR.	NO. OF CARS	
	INDEX TOTAL	128.5

Size Factor	Index	Base Pr.	Unit Pr.	Sq. Ft.	Cubic Ft.	VALUE	
	1.29	3.90	5.03	1100		5534	
EXTRAS							
REPRODUCTION VALUE							
LESS DEPRECIATION 11.5 %						636	
BUILDING VALUE							4898

OTHER BUILDINGS	Fr.	Brk.	Metal	Stucco	Con.	Other	Floors	Size	Hgt.	Cubage	Grade	Cond.	% Cond.	UNIT	
PRIVATE GARAGES															
BARNS															
CAMPS															
SHEDS															
GREEN HOUSES															
SILOS															
CHICKEN HOUSES															

(CONSTRUCTION: Fr., Brk., Metal, Stucco, Con., Other)

BUILDING PERMIT	CHECKED BY	VALUED BY	UNFINISHED VALUE	
ESTIMATED COST OF WORK $			VALUE TO BE ADDED	
AREA SQ. CU. FT.	DATE OF APPRAISEMENT			
DATE ISSUED			TOTAL BUILDING VALUE	4898

ous sciences to engineering problems. He did, however, wish to produce a method which would answer the many needs of governmental appraisal and, as stated above, conceived the Cincinnati plan. This article was written in collaboration with Professor Raymond W. Renn, of the University of Cincinnati, who in 1931 improved and extended the system for use in Hamilton County.

An examination of a typical field card used in the 1931 appraisal as reproduced in Table I shows that the information accumulated under this system does not differ greatly from that accumulated in any other. It is in the use of this information that the Cincinnati method is unique.

The field supervisor grades the houses into "High Class A", "High Class", "Good", or "Cheap". Grading is very important in this system and must be done by men with building and appraising experience.

The field cards are then given to a team of two men, detailed to gather the necessary data. One man measures and draws a floor plan of the house, while the other gathers the information relative to the items listed under "Building Description", condition, age, and other notations. The field cards, after the information is placed on them, are sent to the office to be computed, as will be explained later. The final value is placed upon the building by computers in the office.

There are certain well-defined common rules governing the erection of homes. For example, cheaply constructed houses would be those in which one would find cheap workmanship, plain design, and uniformly cheap material. This conformity to grade of workmanship, material, and design, would also be true of houses in the "Good" or "High Class" grades. In and about Cincinnati the greatest number of houses fall under the "Good" or "Average" class, and one of these houses will be used as an example to show the development of this system. The cost of many such houses in this class is known or it is possible to have estimates made from plans from which the cost can be established.

The following example shows a Class 2 house:

ONE-STORY ONE-FAMILY HOUSE—GOOD GRADE
26x40, 1040 Square Feet
Perimeter 132 feet

Item	*Description*	*Cost*	*Per Cent of Total Cost*	*Index Number*
1	Foundation, concrete	$436	9.2	9
2	Basement:			
	Full Excavation	184	3.9	4
	Cement Floor	191	4.0	4
3	Walls, Siding	772	16.3	16
4	Roof, Pitched	258	5.5	6
5	Roofing, Asphalt Shingle	190	4.0	4
6	Exterior Trim, plain	871	18.4	18
7	Interior Finish, pine	858	18.0	18
8	Floors, pine all rooms	293	6.2	6
9	Attic—none			
10	Heating, Hot Air Furnace	180	3.8	4
11	Lights, Electric	140	2.9	3
12	Plumbing: Bath, Sewer, Water, Gas	372	7.8	8
		$4745	100.0	100

The cost of each item is a percentage of the whole cost. The Cincinnati method uses factors corresponding to the percentage cost of the particular item to the whole cost. Dividing the cost by the number of square feet of ground

floor area gives the square foot base price for this typical building, $4.56.

Costs of other types of construction for the same house may be computed, and index factors for these listed, as in Table II. For example, the cost of a stone foundation would be $660.00, while if built on piers it would be $190.00. These costs give index factors of 14 and 4 respectively.

TABLE II

CLASS 2 — 1 STORY—1 FAMILY

1. Foundation	
Concrete	9
Stone	14
Brick	16
Cement block	9
Piers	4
2. Basement	
Full Excavat.	4
Sub-basement	9
Cement floor	4
Wood floor	2
Finished room	2
3. Walls	
Siding	16
Shingles	17
Stuc. on Fr	17
Stuc. on Mas.	25
Stone	42
Com. brick	28
Face brick	30
Brick veneer	26
Cement block	18
4 & 5. Roofing	
Compos. Fl.	6.5
Compos. Pt	8
Asph. shingle	10
Wood shingle	11
Asbe. shingle	13
Slate	14
Tile	14
Metal-flat	9.5
Metal-pitched	13
6. Exterior Trim	
Plain	18
Dormer	15
Bays—1 story	1
Bays—2 story	
7. Interior Fin.	
Pine	18
Hardwood	21
Fireplace	3
8. Floors	
Hardwood	10
Pine	6
9. Attic	
Unfinished	3
Finished rooms	
1 room	7
2 room	10
3 room	13
10. Heating	
Hot Air	4
Hot Wat. & Vap.	9
Steam	7
11. Light	
Electric	3
Gas	15
12. Plumbing	
Baths	3
Tile floors	1
Tile walls	3
Toilets	1
Lavatories	2
Sewer	2
Water	2
Gas	0.5
14. Built-in Garage	
1 car	6
2 car	9

CLASS 4 — 1½ STORY—1 FAMILY

1. Foundation	
Concrete	8
Stone	12
Brick	14
Cement block	8
Piers	3
2. Basement	
Full Excavat.	3
Sub-basement	8
Cement floor	3
Wood floor	1.5
Finished room	1.5
3. Walls	
Siding	12
Shingles	13
Stuc. on Fr	13
Stuc. on Mas.	19
Stone	35
Com. brick	22
Face brick	24
Brick veneer	21
Cement block	14
4 & 5. Roofing	
Compos. Fl.	5
Compoe. Pt	6.5
Asph. shingle	8
Wood shingle	9
Asbe. shingle	10
Slate	12
Tile	12
Metal-flat	6.5
Metal-pitched	11
6. Exterior Trim	
Plain	20
Dormer	15
Bays—1 story	1
Bays—2 story	
7. Interior Fin.	
Pine	23
Hardwood	29
Fireplace	3
8. Floors	
Hardwood	12
Pine	7
10. Heating	
Hot Air	4
Hot Wat. & Vap.	9
Steam	7
11. Light	
Electric	3.5
Gas	1.5
12. Plumbing	
Baths	3
Tile floors	1
Tile walls	2.5
Toilets	1
Lavatories	2
Sewer	2
Water	2
Gas	0.5
14. Built-in Garage	
1 car	6
2 car	9

CLASS 6 — 2 STORY—1 FAMILY

1. Foundation	
Concrete	6
Stone	9
Brick	11
Cement block	6
Piers	3
2. Basement	
Full Excavat.	3
Sub-basement	6
Cement floor	2
Wood floor	1.5
Finished room	1.5
3. Walls	
Siding	19
Shingles	20
Stuc. on Fr	20
Stuc. on Mas.	29
Stone	47
Com. brick	33
Face brick	36
Brick veneer	32
Cement block	22
4 & 5. Roofing	
Compos. Fl.	4.5
Compos. Pt	6.5
Asph. shingle	8
Wood shingle	9
Asbe. shingle	10
Slate	11
Tile	11
Metal-flat	6
Metal-pitched	10
6. Exterior Trim	
Plain	17
Dormer	1
Bays—1 story	1
Bays—2 story	1.5
7. Interior Fin.	
Pine	2.2
Hardwood	2.7
Fireplace	2.5
8. Floors	
Hardwood	12
Pine	7
9. Attic	
Unfinished	2.5
Finished rooms	
1 room	6
2 room	8
3 room	10
10. Heating	
Hot Air	5
Hot Wat. & Vap.	12
Steam	9
11. Light	
Electric	4
Gas	2
12. Plumbing	
Baths	3
Tile floors	1
Tile walls	2
Toilets	1
Lavatories	2
Sewer	1.5
Water	2
Gas	0.5
14. Built-in Garage	
1 car	5
2 car	7

Assume now a slightly different house in Class 2, with the same number of square feet. Let this house have face brick walls instead of siding, a tile roof instead of asphalt shingles, hardwood floors instead of pine, steam heat instead of hot air, and a tile bath instead of the plain bath. We would then list the following:

Item	*Description*	*Index*
1	Foundation, concrete	9
2	Basement, excavation cement floor	4
3	Walls, face brick	30
4-5	Roof, pitched, tile	14
6	Exterior trim	18
7	Interior finish, pine	18
8	Floors, hardwood	10
9	Attic—none	..
10	Heating, steam	7
11	Lights, electric	3
12	Plumbing, tile bath, sewer, water, gas	12
		129

The reproduction cost of any Class 2 building of good grade, with 1,040 square feet area may quickly be determined by using the sum of the index factors times the cost per square foot of the typical building.

Building value, 1040 $\times$ \$4.56 $\times$ 1.29 = \$6121
(sq. ft.) (cost per sq. ft.)

The ratios show that a house with features 29% better than average will cost 29% more than the average to produce.

One major difficulty remains in the establishment of reconstruction value for any Class 2 house; namely, that with reference to size and shape. The effect of these factors on cost was determined through an analysis of cost

data covering a large number of buildings. For example, the cost of the roof will vary with the area, and that of the walls with the perimeter. Third, there are items that do not appreciably vary with size. Below is shown an analysis made of the building in question.

Item		Total Index No.	Varying with Perimeter	Varying with Area	Constant
1	Foundation	9	9	.	.
2	Basement	8	.	8	.
3	Walls	16	16	.	.
4-5	Roof and roofing	10	.	10	.
6	Exterior trim	18	6	6	6
7	Interior finish	18	6	10	2
8	Floors	6	.	6	.
10	Heating	4	.	4	.
11	Lights	3	.	3	.
12	Plumbing	8	.	.	8
	Total	100	37	47	16

Since the typical building had an area of 1,040 sq. ft. and a perimeter of 132 ft., the cost per sq. ft. of a house 40 ft. by 40 ft., area 1,600 sq. ft., perimeter 160 ft., could be computed as follows:

$$\frac{160}{132} \times .37 \times \underset{\text{(Base Price)}}{\$4.56} \times \frac{1040}{1600} = \$1.33$$

$$\frac{1600}{1040} \times .47 \times \underset{\text{(Base Price)}}{\$4.56} \times \frac{1040}{1600} = 2.15$$

$$.16 \times \underset{\text{(Base Price)}}{\$4.56} \times \frac{1040}{1600} = .47$$

Cost per square foot, 1600 S. F. House = $3.95

The shape of the building naturally affects the unit price per square foot. If, however, unit costs from a sufficient number of structures are plotted and the average curve drawn through them, it will give results close enough to normal shapes to justify unit costs based upon area alone.

Base price sheets for areas varying by 100 square feet intervals were prepared for the three grades used in the Cincinnati appraisal. One of these sheets is shown in Table III.

The analysis that was made with the one-story one-family house in the good grade was accomplished for all types listed, running from one-story stores, one-family and double dwellings to and including five-story five-family structures, in all a total of twenty-one different types or classes handled similarly to the Class 2 house.

This requires no little preparation, a lot of investigation and consultation, too much ground work and figuring, in fact, for anything on a smaller scale than public appraisal work. As soon, however, as the prices have been figured and checked against buildings of known costs, the work can be turned out with surprising rapidity.

Upon completion of the field work, the field cards are returned to the office, and the class of house established (this determines the set of indices and basic prices to be used). The cards are then turned over to a group who place index numbers corresponding to the field men's checks. The cards are next given to comptometer operators for final computation.

There are certain limitations to this method of appraisal as there are to any other. The index method was not used for the highest class residences, all of which were cubed according to knowledge of costs of like types; this being similar to common practice in other methods of appraisal. This is also true of apartment and commercial buildings as well as structures of unusual types, even in dwelling houses.

The largest and best use of the index

TABLE III

GOOD CLASS — BASE PRICES

	1 Story			1½ Story		2 Story				2½ Story	
	1	2	3	4	5	6	7–8	9	10	13	14
Area	Store	One Family	Double	One Family	Double	One Family	Double and Duplex	Store and Apt.	4 Apts.	3 Apts.	Duplex
400	4.89	6.30	....	8.23	....	9.44	....	9.10	....	....	....
500	4.51	5.95	....	7.69	9.19	8.85	10.21	8.40	....	11.98	11.70
600	4.14	5.61	....	7.14	8.71	8.25	9.69	7.71	....	11.33	11.10
700	3.94	5.27	....	6.73	8.21	7.80	9.16	7.33	....	10.72	10.50
800	3.78	5.00	6.10	6.43	7.75	7.32	8.61	7.04	9.38	10.08	9.87
900	3.62	4.76	5.75	6.15	7.27	6.98	8.10	6.74	8.82	9.48	9.27
1000	3.49	4.62	5.45	5.98	6.94	6.69	7.73	6.50	8.43	9.03	8.84
1100	3.38	4.46	5.21	5.81	6.72	6.50	7.48	6.29	8.15	8.75	8.57
1200	3.28	4.33	5.00	5.67	6.50	6.35	7.22	6.10	7.88	8.45	8.27
1300	3.20	4.21	4.83	5.53	6.31	6.20	7.02	5.97	7.63	8.22	8.04
1400	3.14	4.10	4.68	5.40	6.12	6.06	6.81	5.86	7.43	7.97	7.79
1500	3.08	4.02	4.55	5.32	5.95	5.94	6.62	5.74	7.22	7.75	7.56
1600	3.04	3.95	4.44	5.24	5.77	5.84	6.42	5.65	7.05	7.52	7.35
1700	3.00	3.88	4.35	5.15	5.66	5.73	6.30	5.58	6.94	7.36	7.20
1800	2.96	3.81	4.25	5.09	5.55	5.65	6.18	5.50	6.80	7.23	7.07
1900	2.92	3.76	4.17	5.03	5.46	5.58	6.09	5.44	6.70	7.12	6.96
2000	2.88	3.72	4.08	4.96	5.38	5.50	5.98	5.37	6.62	7.01	6.85
2100	2.85	3.67	4.02	4.91	5.31	5.43	5.90	5.30	6.52	6.91	6.71
2200	2.82	3.62	3.95	4.86	5.24	5.36	5.83	5.24	6.46	6.82	6.67
2300	2.79	3.58	3.89	4.81	5.17	5.31	5.75	5.19	6.38	6.74	6.59
2400	2.76	3.54	3.82	4.77	5.11	5.26	5.69	5.14	6.32	6.66	6.51
2500	2.73	3.50	3.78	4.73	5.06	5.21	5.61	5.09	6.25	6.63	6.44
2600	2.71	3.46	3.73	4.69	5.01	5.16	5.57	5.04	6.20	6.60	6.38
2700	2.69	3.43	3.69	4.65	4.95	5.11	5.50	5.00	6.15	6.49	6.31
2800	2.67	3.40	3.65	4.62	4.90	5.07	5.45	4.96	6.10	6.38	6.24
2900	2.65	3.38	3.60	4.60	4.85	5.04	5.40	4.94	6.04	6.32	6.18
3000	2.64	3.37	3.56	4.58	4.81	5.01	5.35	4.92	6.01	6.27	6.12
3200	2.61	3.35	3.51	4.55	4.75	4.96	5.29	4.87	5.85	6.19	6.05
3400	2.59	3.33	3.47	4.54	4.72	4.92	5.24	4.82	5.81	6.13	5.99
3600	2.57	3.31	3.43	4.53	4.70	4.90	5.20	4.78	5.81	6.09	5.95

method is in arriving at reconstruction value of houses which conform to types and which of course make up 80% to 90% of our dwellings.

Through the efforts of Professor Renn, this method of appraisal was extended to factory buildings as most of the plants reveal very definite classes and types of construction. In this work, however, the area and perimeter factors could not be plotted to conform to averages and used only on the area basis, the shape and size of industrial buildings not being in any sense uniform. The area and perimeter factor was therefore used in each and every computation.

Without going into further detail regarding the use of this system in the valuation of industrial property, suffice it to say that its use in this field was as eminently satisfactory as it was in home appraising.

In conclusion, it may be said that the Cincinnati plan as improved (not perfected) in the 1931 Hamilton County appraisal, has stood up in one of the most trying series of years to which any appraisal has been subjected.

Appraising Grain Elevators

By ALLISON P. ALLINGHAM

IF the final test of land value be its highest utility as exemplified by the greatest earning power of its use and occupancy, the land on which a grain elevator is located should command peculiar consideration. The nature of the business is one in which the main considerations are facilities for car load or quantity shipments. The terminal elevator which combines deep water frontage over which the largest steamers can load or discharge, with rail facilities equal to its capacity for transshipments, possesses factors which rank high. If the railway service be poor or presents difficulties, it is reflected in the value of the land.

The modus operandi for appraising grain elevators probably is not different from that employed in the valuation of other manufacturing or warehouse properties. In either case, a knowledge of the cost of construction and equipment, with proper deduction for depreciation and obsolescence—purely an engineering matter—is requisite. The elevation and storage of grain where water and rail transportation meet, at ports such as Chicago, Milwaukee, Duluth, Superior, Fort William, Buffalo, Montreal, and at seaboard, is a very profitable business with modern machinery.

Grain elevators do not require large areas for their operation and it is usual for the railroad on which they are located to supply as much land for additional storage of cars and switching as may be necessary for the economic handling of grain. For example, an elevator of 1,000,000 bushels capacity needs only a couple of acres on which to operate a turnover of 12,000,000 bushels and frequently they turn over more than twelve times per year. If the earnings average one and three-quarters cents per bushel, this would give $210,000.00 per year gross. A lumber yard, an ore dock, or building materials, sand and gravel, occupying this area could not approximate this earning. However, cases are known where ore handling concerns do not feel embarrassed at paying fifteen cents per square foot per year rental for a deep water dock with rail facilities.

Grain Movement on This Continent

A recent Government publication states that in 1927 the United States and Canada produced 44.4 percent of all the grain grown in the world. The territory tributary to the Great Lakes is the most important grain producing district in the world and the section from which the greatest surplus is exported to other countries. Besides the States bordering on the Lakes, large quantities of grain reach Lake ports from Missouri, Kansas, Nebraska, Iowa, Montana, and the Dakotas in the United States, and the Prairie provinces of Canada. The Canadian grain comes principally through Fort William and Port Arthur where there are terminal elevators of 87,000,000 bushels storage capacity. Their shipping capacity far exceeds the receiving capacity at Montreal and Quebec

Author's Note—As in the adjudication of cases at law, each appraisal presents itself as a distinct problem with its precedents, its general and specific applications, and its comparative data. Value can be measured only by comparison. What to one mind is a comparable transaction, to another may be entirely dissimilar. Two appraisers in good faith, may arrive at quite divergent values using the same set of supporting facts. Unless the basic facts are marshalled chronologically and presented in such a way that they follow in natural sequence, an appraisal may be nothing more than a random judgment. We believe, however, that a real estate appraisal can be made convincing, not only to one really conversant with conditions in the particular locality but readily understood by men in other cities, accustomed to analyzing such matters. With this in mind we present our brief on APPRAISING GRAIN ELEVATORS, from the standpoint of the Realtor.

which have five terminal elevators with 15,000,000 bushels storage capacity. One elevator at Fort William in 1926 of 2,500,000 bushels storage capacity, ran through 74,000,000 bushels, and, as there are thirty-six of them at this end of the Canadian belt, it will be seen that a large share of Canada's grain export has to be handled through American ports.

The task of accommodating this great movement has largely fallen to Buffalo at the foot of the Lakes, which has a storage capacity of 42,000,000 bushels in twenty-one Lake elevators and 5,000,000 in sixteen smaller local elevators not on deep water. Before navigation closes on the Lakes, a large number of vessels come to Buffalo and lay up with storage grain which is unloaded during the winter months. The harbor is easily kept open by tugs, because of higher temperature than other lake ports, and Buffalo's commercial grain elevators are in operation almost continuously throughout the year. This fact enables them to produce large earnings.

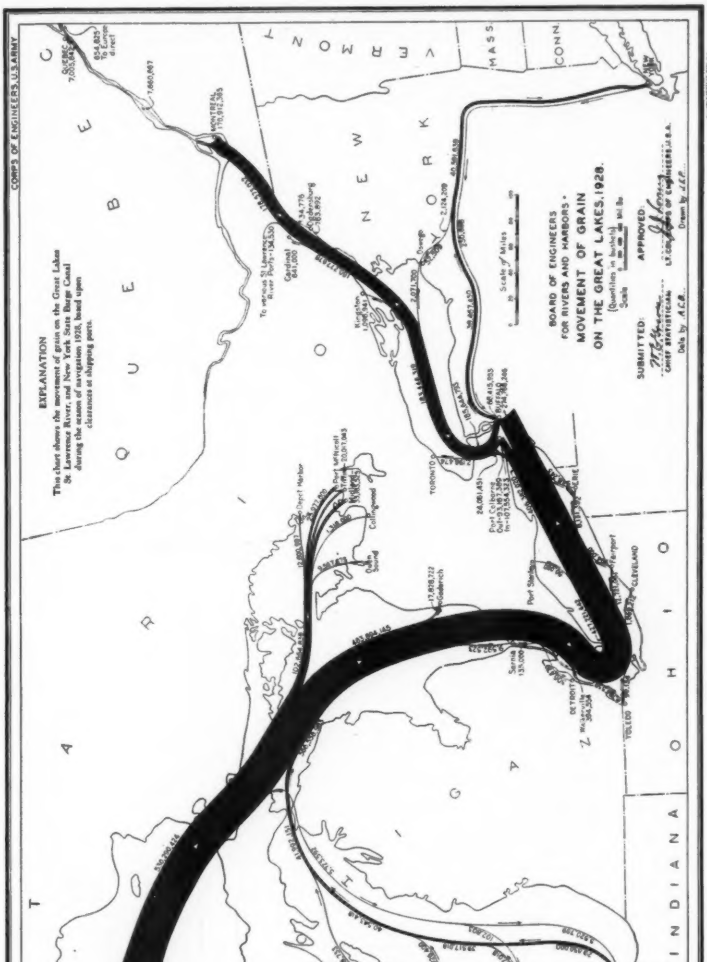
A saving of a fraction of a cent per bushel in transport to seaboard will serve to divert substantial movements of grain. The ocean rates are practically the same from American seaboard ports and grain is such desirable cargo that shippers are more directly interested in the cost to land it at the seaboard.

Grain Shipping Ports

The principal United States Atlantic grain shipping ports today are Portland, Boston, New York, Philadelphia, Baltimore, Norfolk, which receives large quantities by rail. New Orleans and Galveston handle the bulk of grain shipped from Gulf ports while limited quantities flow through Mobile, Port Arthur and Texas City. New Orleans has the advantage of low rates because of river transportation. The greater quantity comes to Gulf ports from Missouri River territory, Kansas, Oklahoma and Texas. The ports of Vancouver, Seattle, and Portland, Oregon, are beginning to be factors in shipments on the Pacific Coast.

The largest single elevator on the Lakes is the Chicago & Northwestern at Chicago with a capacity of 9,000,000 bushels storage. Most of the elevators at Upper Lake Ports are located on deep water, have railway switching service and a minimum of street access which is required only for employee or supplies entrance. A rather interesting chart is appended hereto, by permission, showing the grain movement on the Great Lakes during 1928 (Fig. A). Attention is called to the movement of grain west-bound from New York to Buffalo over the New York State Barge Canal. This is accounted for by the fact that the great northwest is unable to supply the local mills with its demand for flax seed, hence large quantities are imported from the Argentine annually. The movement of American grain out of Chicago shows for the years 1920 to 1928 inclusive an average of 58,302,695 bushels by water and 95,947,194 by rail. From Duluth-Superior by water 111,799,801 bushels and 7,626,115 bushels by rail. Since 1868 the volume of grain moving on the Great Lakes has increased eleven and one-half times. There has been no appreciable increase during this period in the quantity moving on Lake Michigan by water. It is apparent that this great movement through Chicago is largely controlled by the rail carriers. Government records show that in 1868 there was shipped by water from Chicago 38,-

FIG. "A"


EXPLANATION
This chart shows the movement of grain on the Great Lakes St. Lawrence River, and New York State Barge Canal during the season of navigation 1928, based upon clearances at shipping ports.
BOARD OF ENGINEERS
FOR RIVERS AND HARBORS
MOVEMENT OF GRAIN
ON THE GREAT LAKES, 1928.
Scale of Miles
SUBMITTED:
CHIEF STATISTICIAN
APPROVED:
Data by A.C.B.
WAR DEPARTMENT
CORPS OF ENGINEERS, U.S. ARMY
MONTREAL
BUFFALO
TORONTO
CLEVELAND
DETROIT
TOLEDO
CHICAGO
MILWAUKEE
DULUTH
SUPERIOR
PORT ARTHUR
FORT WILLIAM
Kingston
Oswego
Goderich
Sarnia
Port Stanley
Collingwood
Green Bay
ONTARIO
QUEBEC
NEW YORK
VERMONT
MASS
CONN
OHIO
INDIANA
ILLINOIS
IOWA
WISCONSIN
MICHIGAN
MINNESOTA

000,000 bushels and in 1928 only 29,-000,000.*

Types of Grain Elevators

Grain elevators are divided into two general classes—receiving houses and transfer houses. On the western prairies elevators of a very much smaller type, located on the right of way of the railways, are used largely for collection and storage purposes. The grain is received from wagons and shipped by rail. These are different type from the terminal elevators used for transshipment of large cargoes and which combine large storage space with equipment for rapid handling. Terminal elevators receive and ship by water or rail or both. Some of these are known as "Hospital" elevators from the fact that they are equipped to clean and treat defective and damaged grain which may be otherwise unmarketable.

At seaboard, long galleries, housing conveyor systems, run from the elevators to vessels at their berths and two or more vessels may be loaded simultaneously without interfering with other cargo shipments via the same boat, thus fitting in with general traffic requirements. On the upper lakes, grain elevators are specially designed to accommodate purely grain carriers and have not to meet these conditions. At Montreal and New York, for example, floating elevators attend inland vessels or barges and transfer direct to sea-going ships.

The first elevators and conveyors were designed only for use in flour mills. They were afterwards, by improvements, adapted for easy and rapid handling of grain in transit. A miller named Oliver Evans designed and built the first Transfer elevator of wood on the Evans Ship Canal, Buffalo, in 1842. Its success was soon followed by others. Before 1900, the matter of fireproof vs. wooden construction was nothing more than an interesting speculation.

*Transportation on the Great Lakes, War Department Engineer's report 1930.

The success of the large steel elevator of the Great Northern Railway, built at Buffalo around 1898 soon focused attention to this type, and in 1901 the same company built another of 3,100,000 bushels capacity at West Superior. The earlier steel tanks were placed on the ground with conveyors running through concrete passage ways below. They were not protected from the elements and rapid deterioration resulted. New plates had to be fitted frequently and the outside painted to keep from corroding. Steel grain tanks have a longer life if housed. Square or round bins of tile with steel hoops to support the strain have given way to steel and reinforced concrete tanks because of lessened cost and greater resistant strength.

Advent of Concrete Construction

The years 1899-1900 saw the beginning of reinforced concrete bins for storage of grain. Three engineers at three different points, Chicago, Minneapolis and Indianapolis, working independently, designed and erected large bins of this nature. Because the idea was new and untried the engineers at Indianapolis job had to give an eight year guarantee. Today concrete construction is almost universal.

In the accompanying air view (mouth of Buffalo Harbor—Fig. B), one will find four distinct types of commercial elevator side by side—wooden, circular steel tanks, open and enclosed, and reinforced concrete bins. All these rest upon what may be considered the highest valued land used for similar purpose on the Great Lakes. It would appraise $3.50 per sq. ft. or more. This high value, how-

ever, is not alone due to its present utility, but the fact that it could be used for warehousing of any kind, including package goods and cold storage, being near the local markets. In connection with some of these elevators are flour mills and linseed oil mills of large capacity which are in continuous operation.

It may not be out of place here to give an idea of the operation of a modern grain elevator. The main body of the building technically known as the "house" is mostly occupied with bins for storing grain. These bins are usually about 100 feet high and twenty-five feet in diameter. Above the bins is a structure which is generally three stories high called the cupola containing the working floors and operating machinery. Most generally the upper story of the cupola contains the machinery which drives the legs, etc., and distributing spouts. The middle story holds the garners and the lower story the weighing hoppers and cleaning machines. Below the cupola and main roof and extending the entire length and width of the house is the distributing or spout floor. Here are the conveyors for transporting lengthwise and distributing spouts for transfer by gravity from the scale hoppers to the bins. The grain is elevated and discharged into garners by means of legs reaching from the bottom of pits sunk below the foundations of the bins, up to the topmost story of the cupola. These legs contain buckets attached to endless rubber or leather belting. From the garners, the grain passes to the lower floors where it is weighed, cleaned and finally spouted to its proper bin. To get the grain from

Fig. "B"

vessels, a stationary or movable tower containing an endless belt with buckets attached, is lowered into the hold and carries the grain to the top of the house as above described.

Shipping Out of the Elevator

The process of shipping out of the elevator, by cars, consists of drawing the grain from the hopper bottomed bins to the basement belt carriers which run into the working house. There it is elevated, discharged into garners and thence to scales, precisely as in the preceding example up to the point of its discharge from the scale. Each car load is weighed separately and discharged into its particular car through what is known as a car spout with a vertical drop of about 100 feet. The velocity of the grain at the time it reaches the car is very high, enough to shoot it to the opposite ends through two movable openings. The process of loading cars is very rapid and only limited by the speed at which the leg can fill the scale again. To shoot the grain out of the scale into the car, move the car and spot another car, requires about six minutes, or ten cars per hour per spout.

Grain Elevator Construction

We assume in this discussion that the appraiser has knowledge of the sub-surface condition involving extra or ordinary cost for foundations of the structure. If there be quicksand or extreme piling to reach rock or substantial base, that would depreciate the land value to some extent. The cost of construction of large terminal grain elevators of 1,000,000 or more bushels capacity ranges at present from forty cents to fifty cents per bushel complete, *i. e.* with one movable marine tower, ordinary dock and easy foundations.

The contract price on two erected in Buffalo in 1914 totaling 2,500,000 bushels was $1,000,000 or an average of $0.40. These were built by the same contractor at the same time. The second took into consideration the fact his equipment was already on the ground near by.

A study of elevator cost ranges from $0.18 per bushel in 1901 to $0.50 per bushel in 1927.

This does not include cost of financing or preparation of the ground for track layout, special equipment, etc. The general average along the Upper Lakes would probably be nearer ninety cents per bushel now, ready for business. Extension bins of concrete for storage of 1,000,000 bushels or over, without marine towers would be about forty percent to fifty percent less. Wooden elevators have an average life of twenty-five years. Because of the greater hazard of fire, they cannot compete successfully with fireproof houses. For example, the fire insurance rate on grain in a specific wooden elevator is $2.70 per $100, as against a concrete house of fifteen cents per $100.

Circular bins are cheaper to construct than rectangular bins and equally economical in operation. Rectangular bins are usually erected only in special circumstances. Reinforced concrete bins cost less than steel and are becoming more popular. Steel tanks have to be replaced oftener than concrete, especially if not protected by an outer covering.

The subdivision of cost of a typical modern concrete elevator with house of latest design located on water front may be analyzed as follows:

Docks	15%
Two marine towers	15%
Foundations	10%
Concrete	35%
Machinery	25%
	100%

Thus the division of cost of a 1,000,-000 bushel elevator at fifty cents per bushel would be:

Docks	$ 75,000.00
Two marine towers.....(a)	75,000.00
Foundations	50,000.00
Concrete	175,000.00
Machinery	125,000.00
	$500,000.00

(a) Movable marine towers cost $40,000 to $50,000 in recent years. Large stationary towers 20% to 25% less.

Special dryers and other refinements would not be included in such an estimate.

In 1927 a contract for one million bushel concrete elevator at a railroad siding inland was for $0.25 per bus. In this the machinery was not so elaborate as in a water front property.

The figures used herein do not include gallery conveyors from the elevator to vessels docking some distance away as at Montreal, Quebec, St. John, N. B., etc., but refer to Upper Lake ports where vessels come direct to the elevator.

Making the Appraisal

In this we assume that an adequate appraisal can be made on the basis of cost of reproduction. The Supreme Court has so assumed in recent decisions affecting railroad and public service corporations and, therefore, we feel we are on firm ground. The greatest element of uncertainty injected into an appraisal of a specific utility building would be that of depreciation and obsolescence. Depreciation refers to the physical structure and its effect is shown in the increase in repairs and expense of maintenance. Obsolescence refers to economic conditions and its effect is shown in decreasing earning power.

The measurement, count and classification of the units and the estimate of the accrued depreciation lead to *average* figures. Averaging assumes a similarity of conditions which are not generally found, and yet we believe the straight line method of deduction, based upon the life of the structure will satisfy the Realtor and be more readily understood in the ordinary report on valuation. Some nationally known appraisers take strong exception to this. F. M. Babcock in his book on appraising real estate, says depreciation is "not an operating expense but should be treated as a return of capital," which is precisely what a straight line method does. Concrete construction is comparatively new and the life of such an elevator is yet largely an estimated quantity.

Real Estate appraisers have to deal mostly with land and buildings and without engineering experience are rarely qualified to judge the value of factory equipment. There are so many improvements in equipment being installed in the modern elevator that unless the Realtor is conversant with them, he would do well to obtain the services of a competent plant engineer in valuing these. The element of time in grain transfer has brought into being the car dumper which can unload a box car of bulk grain in a few minutes and which effects large savings in unloading cost.

The grain is dumped into large hoppers and conveyors take it to the top of the house as in all other methods of receiving. Roller bearings, now being substituted for solid or ring oiling, show a saving of fifty percent in power consumption on conveyor belts. The old type elevator had a rope drive which is now giving place to silent chain drives or double helical gearing. A few years ago the use of rope drives in elevators was almost universal but the introduction of the individual motor has eliminated it along with the line shaft. To minimize the effect of grain dust explosion, windows in work

houses are of swinging sash type which open easily, and more or less elaborate dust collecting devices are installed. All these cost money and aid in producing a net revenue which is reflected by the market value of the company's securities.

Land Valuation

Experience has taught us and it is almost an axiom with industrial appraisers,* that rail facilities added to industrial lands give an added value of 100 percent, and that deep water added to lands with rail service give an increase of two to five times. Hence, in comparing elevator occupation with equal areas of land in the neighborhood, it is well to give this rule some consideration. The rules of the Interstate Commerce Commission in valuing railway lands, to our mind, are rather unfair to the carriers when they make comparison of well developed industrial areas with contiguous lands used for farming purposes, and conclude a similarity of value. These rules leave out the fundamental question of income. Urban site rent does not depend upon fertility of the soil. This leads us to declare that a property developed to its highest productive use has a LAND value higher than one poorly or improperly developed, even though it adjoin and be otherwise similar. If the land has some special adaptation to the specific utility, we believe an element of value should be allowed.

In the second annual report of the Railroad Commissioners of Washington this statement appears with reference to railway valuation:

> "The presence of grain elevators, flour mills, saw mills, etc., promised the continuance of traffic which could be economically handled. This insurance of traffic and the possession of adequate terminals, warehouses and docks added a value."

*This, however, is subject to modification since 1927 owing to the introduction of large auto trucks which have diverted traffic from the railroads.

Conversely the presence of railroad facilities of comparative prominence or excellence adds a larger or smaller element to the value of elevator lands. For example; Elevator "A," we will say, has 1,000 feet of straight deep water frontage, with good dock, where the largest vessels can unload 35,000 or more bushels per hour. Along the rear for its full length, are four tracks, where a train of railway cars can load in a few hours. The speed of the machinery is such that the maximum of service can be given in the transfer of grain and each 1,000,000 bushels capacity can be turned over twelve or more times per year. The rail service,

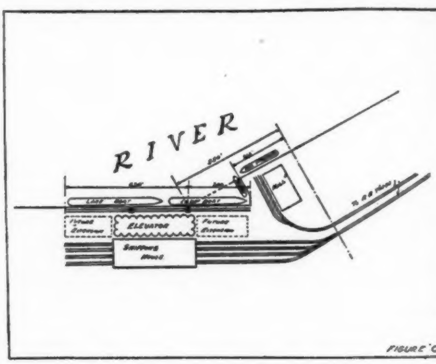


Fig. "C"

given by a particular trunk line is inadequate, we will say, by reason of distance from its storage yard or by congestion consequent on a joint use of entrance tracks with other carriers. It also has stub end switch tracks. The elevator is thus caused extra expense in being compelled to wait for cars. (Fig. "C.")

Value of Terminal Service

Elevator "B" adjoining, also has 1,000 feet of good dockage and equal facilities for vessel transfer but it has a Terminal Company yard in rear, unhampered by adjoining carriers and able to supply a full measure of rail

service. Another advantage is the fact that Terminal rails have switch entrance from each end, making a continuous operation of loading trains of cars. The land, therefore, of Elevator

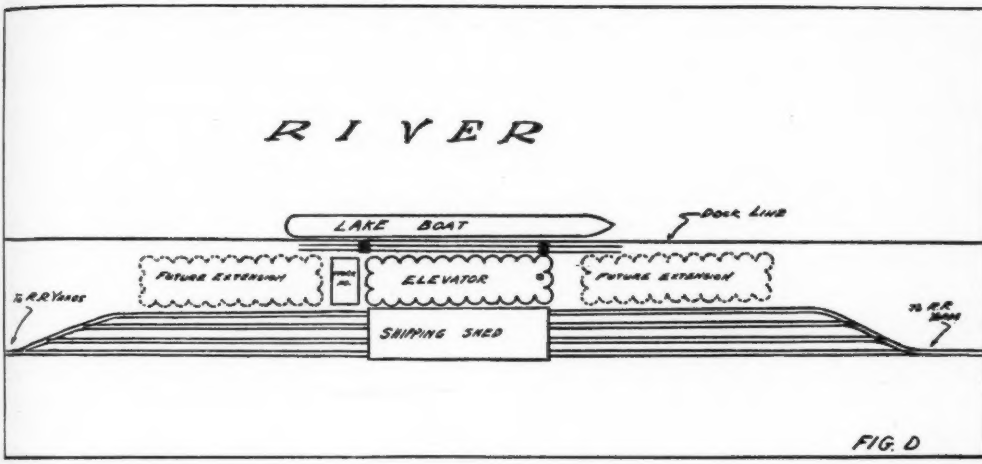


Fig. "D"

"B" would appraise higher than the land of elevator "A." A comparison of specific instances will verify the statement that Elevator "B" can handle shipments more economically. (Fig. "D.")

Having arrived at a figure for the ideal, the various factors of disability must be considered. In this we have Elevator "C" located within a few hundred feet of "A" and "B." It is obsolete in type, of low standard of efficiency, has stub end switches requiring transfer table for cars. It has short length dock which necessitates encroachment on its neighbors for handling of vessels. In order for this elevator to earn a greater income, a great deal of money would have to be spent in acquiring adjoining lands and re-arranging its facilities to meet modern conditions. In its present condition, however, the lands cannot appraise as high per front foot as either "A" or "B." (Fig. "E.")

Another element which must be considered is the use to which the property could be put if sold for other purposes. This being limited, the appraiser is forced to examine into the permanency of grain transfers at the location where the appraisal is made. For example, would deepening the Barge Canal or St. Lawrence River for large ocean vessels lessen the grain turnover in elevators at the foot of the Lakes? Would a deep waterway Chicago to New Orleans divert a large portion of that which now comes down Lake Erie? If so, when are these likely to be built?

The opening of the new Welland Canal has started deepening of channels for large Lake Vessels on Lake Ontario to Kingston, and Prescott, Ont. and Oswego, N. Y., and the erection of larger transfer grain elevators capacity at these points.

It is known that Chicago is not as active today as it once was in the storage of grain. Elevators that have been burned during the past twenty years have not been replaced. This is due largely to difficulties in handling water borne traffic within the harbor.

What effect will a larger production of grain in Europe and South America have on export from the United States and Canada? The present production

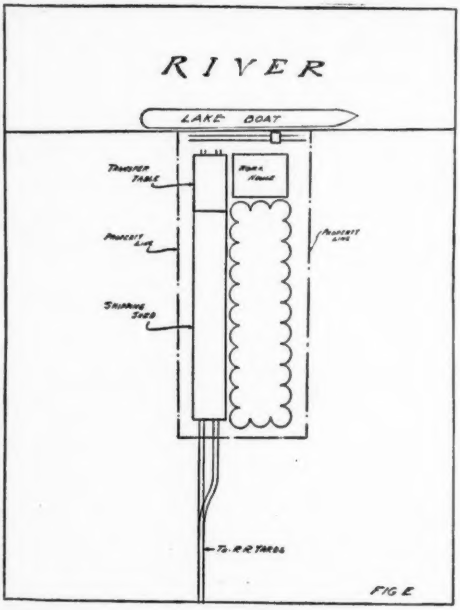


Fig. "E"

of grain in Russia is much less than its pre-war figures and is gradually increasing to the point where it may become a competitor in foreign markets. An increasing amount of corn, rye, and wheat is yearly being produced in South Africa, Australia, and India. In these countries large numbers of grain elevators have been built in the last few years to care for these crops and large export elevators of modern type have been constructed at their seaboards.

What Is Northwest Farmer Growing

What is the tendency of grain growers in our own northwest, where the larger crops are grown? Flax is not grown there in such large quantities as heretofore and a large volume of the seed comes from the Argentine (Fig. "A."). Is the trend of the northwest farmer away from purely grain growing to mixed farming? These and other questions have a bearing on the appraisal of grain elevators. They are special purpose buildings, and aside from the feature of depreciation and obsolescence, there is this other factor of permanence of use and occupancy.

Shortly after the passage of the eighteenth Amendment to our Constitution, many malt houses had to be rebuilt for other purposes and the value of yesterday was at that moment very considerably destroyed. One cannot, of course, anticipate any legislation adverse to the present use of a grain elevator but the bringing out of new machinery to speed up the "turn over" may produce situations where a larger factor of obsolescence may be introduced. Elevators now making a profit by "turn-over" may be forced to purely storage activity. On the other hand, if the present machinery will give the elevator its maximum turn over in line with its full rail and water facilities, the introduction of newer equipment may not add anything vital to its value.

A moot point with appraisers is whether the cost to the vessel of reaching an elevator within the harbor, in extra tug hire and time, has any bearing on the value of the elevator lands in view of equal rate to all destinations within the port limits? This appraiser says "No." Instances may be cited in Lake cities where the larger elevators, doing a greater percentage of business of the port are located farthest away from the mouth of the harbor on cheaper grade land.

Increasing Deep Water Frontage

In 1925 a purchaser of Riverfront lands prepared to erect a large grain elevator and asked for an appraisal.

The deep water frontage was in two tangents forming an obtuse angle, one side 650 feet and the other 550 feet. Neither one of these tangential lines would accommodate two of the larger Lake vessels at the same time, so with the help of engineers, a plan was prepared whereby the longer tangent was increased 335 feet by cutting into the shorter water front area, a width sufficient to provide access for barges and at the same time accommodate the larger vessel which might be at dock. The shorter tangent was thus shortened yet it still permitted a vessel of 450 feet to lay up in front of its dock.

The deep water frontage was thus increased so that two of the larger Lake vessels could lay up in front of the new 2,000,000 bushel elevator at the same time. Provision was made for the future erection of another elevator or mill on the remaining land with deep water facilities for one other large vessel and canal barges (See Figs. "C" and "F"). Adequate rail facilities were also provided along the rear so that the rail shipments would fairly compensate the receiving side.

The land was appraised at about four times its original cost and double its actual cost to date. After careful investigation by the financial houses, the appraisal was approved and the bonds readily sold. Under good management they continue to be good security throughout these troublous times. The land value was proven by known successful operations of similarly developed neighborhood properties. The buildings were approved by an expert mill and elevator architect and engineer.

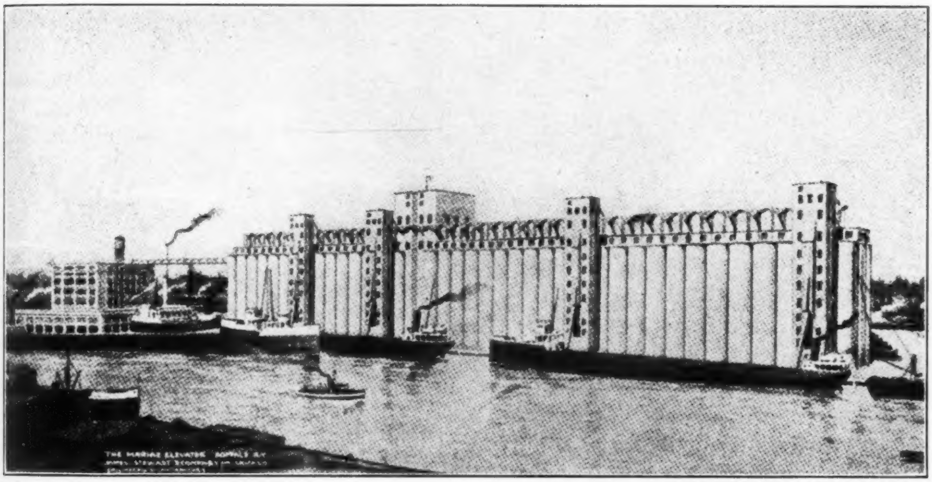


Fig. "F"

An open question in appraising industrial properties is, to what extent must recognition be given to sales of land contiguous to, or comparable with, the land under consideration? As most sales of vacant industrial lands have some qualifying clauses as to present or future improvements, or service by the grantors, we believe these factors have a greater or less bearing on one's analyses. To quote a specific case: An elevator corporation bought from a railway company 400 feet by 167 feet on deep water, paying $200.00 per foot on the water

front. The railway was to spend $35.00 per foot for docks and dredging, supply access by roadway, extend a water line and provide adequate switching facilities for all the elevator's needs. Later, extensions were made and the additional land needed was bought without these conditions at the same or less per front foot. In fact, because of the huge tonnage which the railway receives (which is the purpose of its being), it would seem that the sales price is not altogether an index of value.

It is seldom that railroad sales to a shipper on its lines can be regarded as normal. We have another case in mind where a railroad owned fifty-five acres with long street and deep water frontages. To the north were three mills and elevators which it served. The railroad could not use the intervening land, and to produce an income sold it off to potential customers, at prices of $10,000.00 per acre without, and $12,500.00 with, deep water frontage. The lands adjoining to the north had previously sold by private parties at an average of $25,000.00 per acre. As tonnage was undoubtedly the great question in the minds of the railroad officials, we believe the appraiser would be justified in accepting as his basis the sales between private parties as more nearly reflecting the values agreed upon by willing buyers and sellers.

Other Elements of Value

There is another element which appraisers should carefully weigh and that is the justification for the investment. Justice Holmes says:

> "If the original company embarks upon a speculation which has not turned out as expected, more modest valuations are a result to which it must make up its mind."

Justice Butler of the Supreme Court in a decision given November 22, 1926, says:

> "Present value of lands, plus the present cost of constructing the plant, less depreciation, if any, is a fair measure of the value of the physical elements of the property."

In discussing the intangible elements of value, the learned Judge assented to the following:

> "A good property has an intangible value or going concern value over and above the value of the component parts of the physical property."

He considered in this earning power, established business relations, its credit, the prospect of growth and expansion, operating efficiency, standard of maintenance and desirability, as compared with similar utilities in the same city, and states that "these things make up an element of value that is actual and not speculative." It would be considered by a buyer and seller of the property or its securities.

Therefore, one would be justified to consider the good will of a producing plant which years of successful management has brought to it. That good will would be naturally reflected in its income. If this be averaged over a period of years, it would be a check on the value produced by comparison of lands and of the structure by the reproduction method.

In appraising a commercial elevator one of the elements finally considered is the human equation. A careful checkup on the ability of the managers to obtain sufficient grain business to enable the elevator to produce the maximum turn over each year and thus obtain commensurate earnings, is a vital factor which is reflected in the value of the property. If the management permitted its bins to become clogged with storage grain for long periods, its earnings would diminish. The purchaser of the bonds and shares is peculiarly interested in the management, for upon management rests the

obligation to produce a return proportionate to the value of the plant.

Specific Appraisal

In closing, may we epitomize an appraisal report of a specific commercial grain elevator which will show that we consider it impossible to properly appraise a quasi public utility or manufacturing plant by the "visual" or "opinion" method.

This report begins by citing:

1. The full legal description with notations upon its general features.
2. Type, condition, access, location and desirability. Mechanical and other devices for economic handling of grain.
3. Transportation being the main element, this is carefully outlined. The facilities for filling the elevator from vessels compared with the facilities for shipping by rail, to develop whether or not the elevator can produce as great a turnover as similar plants in equally favored locations. If the elevator is compelled to keep its grain longer in storage, it cannot earn so much. If we can suggest methods for speeding up this turnover, we believe it should be given. Grain men, like other humans, sometimes admit a good suggestion may come from a layman. This is particularly true if it means a saving in insurance rates.
4. Valuation—This is given with a general statement as to why it is so, and reference made to voluminous supporting data.
5. Supporting Data—goes into the question of sales, leases and transactions in the neighborhood, each one analyzed carefully to show whether or not it can be applied to the property in question.

(a) Comparative properties in other locations are also studied and conclusions drawn therefrom.

(b) Insurance rates are given and suggestions for improvements are made with a view to reduction.

(c) Assessments are sometimes analyzed, if we believe they have any bearing on values.

(d) Flow of grain through the port for the past decade and a study of the comparative amounts going through this and other elevators of equal capacity make interesting data and show possiblities which may be useful.

(e) The increase or decrease in storage capacity in other elevators belonging to flour mills and of new transfer elevators also has a place in this report.

(f) Freight rates on grain and flour from this locality as against rates from or through other terminals will have a bearing on future possibilities and volume usually.

(g) Income statement over a period of years is a check on value arrived at.

(h) Other miscellaneous information such as power, management, tidiness and general appearance of the plant which may have a bearing on the business is here given.

(i) Blueprints, surveys and photographs finally visualize the whole so that there need be the minimum of questions to the appraiser at the time the report is considered.

The Influence of Rents and Commodity Prices

By GEORGE L. SCHMUTZ, M.A.I. and LORING O. MCCORMICK

TO the average individual, *Rent* means that sum which is paid for the use of land and its appurtenances. However, in a strict economic sense, Rent is that share of the Joint Product[1] which is paid to the owners of land (and natural resources) for the part they play in production.

When the term *Economic Rent* is used, it will be meant in the strict economic sense, as denoting the return to land or to natural resources; the term *Commercial Rent* will refer to that which is paid for the use of *land and its appurtenances* (e. g., buildings). The necessity for this sharp differentiation will become clearer as we proceed.

Influence of Rent upon Market Price

The most important factor which affects the Market Price of Realty is the estimated quantity of *Future* Commercial Rents. This is for the reason that all *past* Commercial Rents have been collected, and any benefits, or rents of the property, will of necessity arise in the future. A property which will sell for $10,000.00 generally will do so because it has a net income of $800.00 per year, rather than have a net income of $800.00 per year because it is worth $10,000.00.

A property, the net income of which is $1,000.00 per year, would have a Market Price greater than a property which was capable of producing but one-half that amount, assuming similar environing agencies. Of two properties having an income of $1,000.00 a year at present, but with one possessing indications of a future increase in income, it is obvious that the latter would bring the greater price in the open Market.

That the Market Price of Real Estate is not wholly set by the Present Worth of Future Net Incomes is apparent when we consider the income of a property which has been, and is $1,000.00 per year, as compared with another property, the income of which is but $800.00 per year, but which can be expected to have increased earnings in the future. This is further borne out by the comparison between short and long term bonds. Short term bonds may probably sell at par, even though the interest rate be 3%, while long term bonds (with a 4% rate) may sell below par. The Present Worth of Future Benefits, i. e., the discounted value of future net incomes, may be greater in the case of long term bonds, but the market price is assuredly less. The ability to recapture the principal at an early date is of great importance in estimating Market Price, and this ability to recapture principal might well overshadow the consideration of the interest rate.

This leads us to the conclusion that "a bird in the hand may be worth two in the bush," and that the earnings of the moment are of more importance than is an estimate of the more distant future in the estimating of market price. The longer the income is deferred, the greater the rate of capitalization which must be used.

Market Price Set by Present Rents

A careful examination of price movements of stocks, bonds, and of real estate, leads to the conclusion that the immediate past and the immediate future earnings tend to fix Market Price, rather than the more distant future earnings, or the cost of reproduction. This is clearly shown by the Market Price of stocks, bonds and real estate

[1]The gross return produced by Capital, Labor, Land and Organization.—ED.

since 1929. As earnings receded, prices followed, but *only as a change in earnings became apparent.* The rapid change in prices which follows closely the *knowledge* of a change in earnings is *prima facie* evidence that market prices are controlled by the immediate present earnings rather than by the Present Worth of Future Benefits, as assumed in some definitions of Market Value.

The price of a share of U. S. Steel stock has dropped from over $200.00 to less than $30.00 per share and changes in the market price of such shares has accompanied changes in earnings, and at present (1932) it is estimated that the cost of reproduction of U. S. Steel Corporation properties would be greatly in excess of its quoted market price. This clearly shows that the market price of properties, as well as of stocks and bonds, is controlled more by the worth of present and near future benefits.

Understanding the fact that incomes and rents tend to control the *market price* of real estate takes us no more forward for the reason that we merely express one mystery in terms of a greater. Proper understanding can be had only when we understand the operation of these factors which bring about changes in the quantity of rent, and of income, expressed both in terms of price and of value.

Commodity Prices

The wholesale Commodity Price Index, as computed by the Bureau of Labor Statistics of the United States Department of Commerce, is the weighted average of 550 wholesale-commodity prices that prevailed prior to the year 1932, and is the average of 784 such prices since January, 1932. This index is considered one of the best barometers of Wholesale Commodity Price changes in the United States. However, this index, although it measures *Price* changes does not directly measure *Value* changes; commodities generally tend to maintain their inter-value relationships, one to the other, despite wide fluctuations in the Commodity Price Index, or price level.

Therefore, the Wholesale Commodity Price Index is a barometer of changes in the *prices* of commodities, and of real estate, and of changes in the value of money as well, but not a barometer of changes in the value of commodities, or of real property.

The Wholesale Commodity Index thus becomes the safest *qualitative* meter of the changes in the market price of real estate. If, for example, the last sale price of a particular property was $10,000.00 at a previous date when the commodity index was 10% higher than at present, it is entirely reasonable to assume that the property today *would move* in the open market at a figure of *at least* 10% under the last sale price, even though there has not yet been a change in construction costs or in rents.

The Rise and Fall of Rents

A study of Commodity Prices and Rents for the past 80 years shows that commercial Rents rise and fall with Commodity Prices, but with a lag of several years. On the upward movement of Commodity Prices, Rents lag about three years behind; on the downward movement, the lag is slight. Commodity Prices started rising rapidly in the year 1915 and Rents started rising three years later, in 1918; Rents and Commodity Prices both started declining in 1926, with Rents lagging only slightly behind Commodity Prices. What is true of the period 1915 to 1932, is also true of past periods of price fluctuations.

The reason why Rents rise and fall with Commodity Prices may be ex-

plained as follows,—The Rent a merchant *will pay* depends upon how much he *can afford to pay*, as exemplified in percentage leases, where the rental to be paid depends upon the dollar volume of business transacted. Even in stipulated rental leases, the rentals that *will be paid* tends to adjust to the merchant's *ability to pay*. If the rental terms be too high, of necessity there will be a downward revision, or a secret rebating of rent, or a resulting vacancy, eventually. Therefore, the rental that *will be paid* tends to conform to the *ability to pay;* and in turn, the *ability to pay* will depend upon the *dollar volume of sales*. A merchant who sells \$100,000.00 of merchandise annually can afford to pay more rent than if he were to sell only half that sum. To illustrate the connection between Commodity Prices and Rents,—assume a hypothetical case in which a one story commercial building is leased to a shoe merchant who pays a rental equivalent to 7% of his gross sales. Further assume the following: that,—

A. In 1929 he sold 3,000 pairs of shoes @ \$10=\$30,000.00 Dollar Volume @ 7%= \$2,100.00 Rent.

B. In 1931 he sold 3,000 pairs of shoes @ \$ 8=\$24,000.00 Dollar Volume @ 7%= \$1,680.00 Rent.

In this case, a reduction of 20% in the price of shoes has caused a reduction of 20% in the rental paid which, *ipso facto*, reflects a reduction in the capitalized value of the property, which computation will show to be more than proportional to the decrease in the gross rental received.

This same rule holds true in all types of property, be it commercial, residential, or otherwise. The truth of the statement becomes more obvious when we recognize that a reduction in Commodity Prices occasions a reduction in construction costs, etc., which is ultimately reflected in a reduction in rentals. Thus is it seen that Rents, or the gross income from property, tends to rise and fall with Commodity Prices.

Effect of Changing Rents on Capitalized Value

In the foregoing example of the shoe merchant, let us inquire as to what effect this recession in the Commodity Price level will have upon the Rental Level, and therefore will have upon the appraised value of the property.

A reduction of 20% in Commodity Price (e. g., shoes) and a like reduction in Rents—from 1929 to 1931, as shown by the *usual* application of the "land residual" method of capitalization, would reflect a drop of 28% in the total value of the appraised property, or a reduction of 60% in the appraised value of the land—under certain condition as shown in the following:

Condition 1—Year 1929

Gross Income (as stated)	\$2,100.00 per year
Expenses of Building: 14% of Cost (\$10,000.00)	1,400.00
Net to Land	700.00

This net capitalized at 8% (inc. tax) reflects \$8,750.00 as the Land Value.

Condition 2—Year 1931

Gross Income (as stated) (Reduced 20%)	\$1,680.00
Expense of Building: 14% of Cost (\$10,000.00)	1,400.00
Net to Land	280.00

This net capitalized at 8% (inc. tax) reflects \$3,500.00 as the Land Value.

Summary

Year 1929 Land \$8,750.00+Bldg. \$10,000.00= \$18,750.00 Total.

Year 1931 Land \$3,500.00+Bldg. \$10.000,00= \$13,500.00 Total.

In this case, during falling commodity prices, it is found that a recession in a gross rental (\$2,100.00 to \$1,680.00) of 20% has caused a reduction in the surplus to land of (\$700.00 to \$280.00) 60% and a decreased land value of (\$8,750.00 to \$3,500.00) 60% or a decreased property value of (\$18,750.00 to \$13,500.00) 28%.

Conversely, during rising commodity prices, opposite effects are produced.

For example, *reversing the dates* in the preceding problem, we find:

Condition 1—Year 1929

Gross Income	$1,680.00
Expenses	1,400.00
Net to Land	280.00

Condition 2—Year 1931

Gross Income	$2,100.00
Expenses	1,400.00
Net to Land	700.00

Under this assumption it is found that an increase in gross rental of ($1,680.00 to $2,100.00) 25% has caused an increase in the surplus to land of ($280.00 to $700.00) 150% and an increased land value of ($3,500.00 to $8,750.00) 150% or an increased property value of ($13,500.00 to $18,-750.00) 39%.

It is clearly seen that any change in the price of shoes will occasion changes: (1) in the commercial rent paid, (2) in the surplus to land, (3) in the net income to the property and, finally (4) in the market price of the property, for the reason that market prices tend to adjust to capitalized values. This illustration similarly applies to all other commodities: groceries, drugs, clothing, coal, iron, grain, leather goods, etc., etc.

Obviously then, the market price of commercial real estate will fluctuate with changes in Commodity Prices. The same principle also applies to residential, and to all other types of real property.

The importance of this knowledge cannot be overestimated, for the reason that *all rents arise in the future,* and therefore, future rentals will be somewhat dependent upon future commodity prices.

Adjustments of Costs

The previous discussion is intended to point out the *qualitative* effects of changing price levels; in a quantitative sense the actual percentage changes will be somewhat different, depending upon the time at which the appraisal is made in relation to the economic adjustment, that is, how far the adjustment has progressed. For illustration, in the example described it may be that, during rising prices, the reproduction cost of the structure has also risen, and hence the expenses of the building would be greater, thus leaving a lesser surplus to land than that shown in the example.

This condition may be shown as follows:—

Condition 3—Year 1929

Gross Income	$1,680.00
Expenses of Building (14% of $10,000.00)	1,400.00
Net to Land	280.00

Condition 4—Year 1931

Gross Income (increased 25%)	$2,100.00
Expenses of Building, (14% of $12,000.00 increased 12%)	1,680.00
Net to Land	420.00

Thus it is seen that, under the stated conditions, an increase in gross rental of ($1,680.00 to $2,100.00) 25% has caused an increase in the surplus to land ($280.00 to $420.00) of 50% and an increased land value of ($3,500.00 to $5,250.00) 50% or an increased property value of ($13,500.00 to $7,2500.00 28%.

These percentage changes will vary, principally depending upon two conditions: (1) the ratio of *building* cost to *land* value, and (2) the extent of the adjustment of construction costs, rents, etc., to commodity prices.

Causes of Commodity Price Changes

All of the goods in the United States, i. e., land, buildings, machinery, goods—both raw and manufactured, etc., are worth all of the money and things which serve for money (e. g., credit). Therefore, generally speaking, if the supply of *commodities* increase at a greater rate than the increase in *credit,* it follows that the price of commodities will decrease; conversely, if credit increases

at a greater rate than commodities, then prices will rise.

For illustration, if we had 1,000,000 commodities to be exchanged, and $1,000,000.00 of credit — then for the purpose of this illustration, it may be said that the price would be $1.00; and if the *credit* supply increased to $1,200,-000.00 (plus 20%) and the commodity supply remained at 1,000,000 (no increase) in number, then prices would rise to $1.20 (+20%); or if credit were reduced to $800,000.00 (—20%) and commodities remained at 1,000,000 (no change) then prices would fall to 80 cents (—20%).

Price is fixed solely by the relationship existing between Credit on the one hand and Trade (production) on the other, and only indirectly is *price* connected with money or what serves as money (credit, etc.). However, price will be affected by the Credit extended, and *credit* is dependent upon the *estimate* of the relationship existing between money and its effectiveness, on the one hand, and commodities and property on the other. Therefore, the amount of credit extended depends upon the estimate of the ratio existing between money and its effectiveness, and commodities and property.

Prices will remain stationary only when:

1. The *index of trade* (production) is 100
2. *the index of credit* is 100
3. the Effectiveness of Gold is 100
   (with no indicated changes in the quantity, nor the effectiveness thereof)

i. e., each is normal with respect the others.

If, at any moment in time, we find the following indexes to exist: Credit, 170; Trade, 136; Price, 120; and Value, 96, all in respect to 100, which was the "norm" at a previous date, it must be concluded that Credit is overextended, thus causing an inflation in Price and that the inevitable restriction of credit will bring about a reduction in price to that point where *price* will conform to *value, eventually*. Obviously, then a reduction in price will induce a reduction in rent of property and thus bring about a reduction in the capitalized value—and hence in the market price of property.

Effects of Commodity Price Changes

The effects of such restriction of credit, and consequent diminution in prices, produces far reaching effects, some of which are:

1. a transfer of wealth from debtor to creditor,
2. a disappearance of profits
3. a recession in enterprise and industry,
4. unemployment,
5. further price recessions, etc., etc.

The effects of changing Commodity Prices tend to become apparent somewhat as follows:

A *Rising* Commodity Index (rising prices) causes increases in—

1st. Construction Costs
2nd. Reproduction costs of Property
3rd. Rentals (after a lag of time)
4th. Capitalized Value of Property
5th. Market Price of Property.

Falling Commodity Prices produces somewhat opposite conditions and results. During periods of *Rising* Commodity Prices, Commodity Prices and Construction Costs tend to rise together; during periods of *Falling* Commodity Prices, Commodity Prices and Rents tend to fall together. The reason why Construction Costs do not fall concurrently with Commodity Prices and Rents—but only after a lapse of time—is because, Construction Costs are fixed by the Costs of Labor and Materials, and Labor always stubbornly resists cuts in wages. Because of this attitude of Labor, the adjustment of Construction Costs to Commodity Prices on the downward trend is always slow, and alignment attained only after a lapse of time.

In this connection it should be noted that, during a period of falling prices,

that what decrease does occur at first is not so much because of a decrease in the cost of materials, but rather is it because of the increased efficiency of Labor. For illustration, during a period of rising prices, which stimulates activity, there is much construction work prosecuted with the result that there tends to be a surplus of work and a shortage of labor to perform the work. Under such conditions, labor can be and generally is rather independent, and does the minimum amount of work necessary to get by and hold its job. It does not fear being discharged for the reason that there are plenty of other jobs to go to. On the contrary, during *falling* prices, which tends to extinguish profit (etc.) there comes a recession in construction activity with the result that work is scarce and labor plentiful (i. e., considerable unemployment). Under such conditions labor will perform considerably more work—even for the same wage—in order to hold its job, for the reason that jobs are scarce. Thus is it seen that the efficiency of labor rises and its unit cost decreases during a falling price market. In addition to the foregoing, during receding prices, contractors will work on a smaller margin of profit, in order to keep busy—thus further reducing construction costs.

An understanding of the foregoing principles is of the utmost importance in the valuation of real property for the reason that, during *falling* prices:

1. there are no sales upon which market value may be predicated;
2. the appraiser must have some knowledge of how long and to what extent construction costs will recede.

It is these lags and expected price adjustments which occur either during a Rising or a Falling Commodity (or real estate price) Index which embody practically all of the reasons for the differences between the proponents of "Valuation by Capitalization" and "Valuation by Reproduction."

Effects of Price Changes Upon Transfers

Whenever a purchase is made, the amount of money that is paid represents the *buyer's estimate of the future benefits he is to receive from the purchase.* When prices are rising, the debtor gains at the expense of the Creditor. Obviously, under such conditions, people will tend to seek the debtor's position and are willing to pay a premium therefor (this is exemplified by heavy buying of real estate in boom markets). The premium a buyer would be willing to pay ultimately would be represented by the increase in the value of the position, as reflected by the change in price levels. Prices then, are reflected more by consideration of *future price changes,* and by changes in debtor's position, than they are by changes in the value of commodities. In 1916, the prices of property began rising to adjust themselves to our supply of gold and credit. In 1922, a buyer might suddenly conclude that over the past five years, prices of property had risen 10% each year, and believe that such a price increase would continue for a number of years into the future. (Then, the owner of lot equities would prosper). He would also conclude that the creditor's position was an extremely poor one to occupy. As a result, if the property were earning interest on $100,000.00 and rents and prices increasing each year, he might be willing to pay $125,000.00 for the property—anticipating that the earning capacity would soon increase, reach and exceed the $125,000.00 point. From this it should be clear that the buyer purchased two things—first the benefits in the form of rents, arising from the property at the time of purchase, and secondly, the capitalized value of the benefits (income) which he expected

would arise in the future. This seemed warranted under the conditions (of an advancing market), and those men who considered first mortgages (creditor's position), the better investment, were made to appear as fools, while the person who took the debtor's position (lot and equity owners) by the chain of events were made to appear as sages. The chain of years from 1925 to the present, with the reverse processes in operation, has made the man who occupied the debtor's position look like the fool and the creditor (mortgagee) appear as a wise man. When prices are rising rapidly, properties sell in *excess of their earning capacity* at the time, *because of future expectation.* At present (1932) improved properties are selling near or below the value indicated by capitalized earnings, and the world at large, instead of anticipating increases in the value of real estate, and other commodities has been *expecting a decrease* and has been buying only when absolutely necessary.

Falling Prices

The former widespread buying of real estate, due primarily to changes in price levels, and secondly to a rapid rate of growth, is today (1932) checked and the market "frozen." The overproduction of real estate (sub-division lots) for future use has been infinitely greater than that of other commodities. In the case of sub-division properties, it must be recognized that in the past, properties have been sold under "lunch and lecture" and other "high-pressure" methods, at prices greatly in excess of prices received for comparable property sold under normal market conditions. This was unquestionably due to the fact that buyers of such property are, as a whole, less well-informed than buyers of other types of property, and are actuated in purchasing—not because of expected use and occupancy of the property within a reasonable length of time, but because of expectation of future *gain through resale to another.* A principal reason why most outlying sub-division properties are "frozen" at the present moment is because people *now realize that a prospective gain through resale is exceedingly remote, and that a prospect of loss by purchase is reasonably certain.*

In conclusion, during Rising Prices, profits are frequent and activity is stimulated; during Falling prices, activity diminishes and the market tends to "freeze," because of the buyer's expectation of a still further decline.

Under such conditions, when the market is receding, the highest price a purchaser will pay is generally less than the lowest price an owner will take, thereby precluding any meeting of the minds. Odd as it may seem, during a falling market the owner of the property will not sell at the buyer's price, but will oftentimes lease on that basis. For example, the owner will hold his price at $15,000.00; a buyer may offer $10,000.00; the owner will usually enter into a lease in which the rental is based on the $10,000.00 valuation, although he would not sell at that figure.

Owners are prone to believe that price recessions are only temporary, and that prices (and rentals) will some day rise to some former level, "when normality is again attained." It is a trait of human nature to overestimate the importance of favorable conditions and underestimate the importance of unfavorable factors.

The Appraisal of a Prune Orchard

By W. S. Guilford M.A.I.

THIS article is to describe some of the steps in making an appraisal for a Federal Land Bank loan. The next few paragraphs are briefly descriptive of the system through which these loans are made.

As this is being written (March, 1934) loans on farms to the value of $5,000,000.00 are being made every day through the Federal Land Banks of the Farm Credit Administration in the United States.

Appraisals are being made by nearly 2,500 men, some in every state in the Union. These men are appointed by the Land Bank Commissioner upon recommendation of the appraisal section of the Land Bank Division of the Farm Credit Administration and the Federal land banks to which they are to be assigned to make investigations and reports. There are 12 Federal Land Banks to serve the 12 districts into which the United States is divided.

The Land Bank Division is one of the four parts of the Farm Credit Administration. The others are the Intermediate Credit Bank, the Bank for Cooperatives, and the Production Credit Corporation. These four agencies are set up to assist in supplying the credit needs of agriculture in the United States. This financing is accomplished largely by obtaining funds from the investing public through the sale of Land Bank bonds and Credit Bank debentures and loaning on approved security to farmers on farm mortgages, and on crops and other chattels. Funds for the capital structure of the various parts of the Farm Credit Administration are advanced by groups of borrowers and the Federal Government, and supervision over the activities is maintained by the latter, but it is intended to be eventually largely a cooperative credit structure owned and operated by borrowing farmers.

Loans on farms have been made through the Federal Land Banks to the value of nearly $2,000,000,000.00. Over $218,000,000.00 of these loans were made in 1933.

Applications for Federal Land Bank loans must come through and be endorsed by local National Farm Loan Associations in areas where such associations are operating. Associations are corporations chartered under the Federal Farm Loan Act and operating under the supervision and regulation of the Farm Credit Administration. Loans may be made direct to borrowers where no such association is authorized to accept applications, with the expectation that an association may be formed when a sufficient number of loans have been approved in the area. The membership of each Association is restricted to borrowers from the Federal Land Bank, and no other persons are eligible as shareholders. The farmer-borrower who obtains a loan from a Federal Land Bank through a National Farm Loan Association purchases stock in the Association in the amount of 5 percent of his loan. The amount necessary to pay for such stock may be included in the face amount of the loan obtained from the Federal Land Bank.

The National Farm Loan Association endorses and becomes liable for the loan made to each of its members. To protect the Association against loss under its endorsement, the stock subscribed by each member is pledged with the association as collateral security. The Association in turn sub-

scribes to an equal amount of stock in the Federal Land Bank, which stock is held by the bank as collateral.

How to Get a Loan

The first step in securing a Federal Land Bank loan is to make the application and deposit a fee to pay for the investigation by the local association and the appraisal by a Land Bank appraiser.

Then an individual investigator or a committee appointed by the board of directors of the local association makes a preliminary appraisal and, if the property and application appear satisfactory, indicates this on the application and forwards it to the Federal Land Bank of the district in which the association is located. The Federal Land Bank cannot loan a greater sum than that recommended by the local association, even though the land bank appraiser recommends a larger amount. The loan approved by the loan committee of the Federal Land Bank is likewise limited by the values given to the property by the land bank appraiser.

When the application for a farm loan arrives at the Federal Land Bank it is registered—then goes to a preliminary review committee. Here its eligibility is determined and it is checked for errors or omissions, and returned for corrections, if necessary. In this case the fee is returned. Applications from corporations and minors are not eligible according to the Farm Loan Act, and there are some irrigation districts which are in default on interest to bondholders where it is not considered wise to loan money secured from the sale of Land Bank bonds.

A memorandum sheet is checked by this preliminary review committee calling the appraiser's attention to details about water supply and drainage, the district in which the farm is located, soil, plant disease, and other hazards which the experienced members of the committee may know about.

Then the platting or map department makes an outline map of the property for the use of the appraiser and the application is then sent to him.

This application contains the name and address of the applicant and the following information:

1. Legal description of the property — with distances from schools, shipping points, towns, kind of roads, etc.
2. Purposes of the loan—whether to purchase, redeem, improve, buy equipment, buy livestock, or pay debts.
3. Applicant's valuation of the property—buildings and land in detail.
4. List of encumbrances and debts of applicant — secured and unsecured — when incurred and to whom due, and rate of interest.
5. Financial statement of applicant—including contingent liabilities.
6. Purchase terms of farm—when bought, price, amount paid down, and improvements made since purchase, amount debt has been reduced since purchase, and number of times farm has changed hands in the last 10 years.
7. Products and cash income of farm—in detail (It is well for the applicant to include details covering several years).
8. Personal property including livestock farm equipment, farm products, and growing crops.
9. Details of other loans on this farm or others through banks in Farm Loan System, if any.
10. General information—about how long farm has been cultivated, irrigation wells, taxes, fences, ditches, etc.
11. Personal statement of applicant. Age, family and age. Life insurance, rental data, fire insurance.

This requires three of the four legal size pages of the application form.

On the last page is the report of the investigator for the loan committee of the local association, together with the recommendation of the loan committee and board of directors, attested by the local secretary-treasurer. There is additional space for the action of the executive committee of the Federal Land Bank.

If the farm is irrigated the application is accompanied by an irrigation supplement filled out by the applicant

in detail indicating the source and amount of water supply, costs, and other particulars.

In order to understand the rules and regulations under which he is to operate, the appraiser has been carefully instructed in a regular course of training—and has spent some time at the Land Bank reading and studying and reviewing completed appraisals.

He has learned that the values of the farms he is to appraise are to be based upon the normal agricultural value, using the average prices of farm commodities for the five year period prior to the World War as a principal factor and allowing for changes in the relative economic position of some commodities. However, in order to arrive at a valuation of the property many things must be kept in mind by the appraiser. It must be ascertained what crops the farm is capable of producing, as well as average yields and prices over a period of years. Among other things the land must be classified, as to the number of acres of good crop land, the number in pasture, and the number in orchard, timber or waste. Consideration must be given to the character and condition of the soil; rainfall; drainage; possibility of overflow; susceptibility to erosion; the carrying capacity of the pasture land; prevalence of insect pests and plant disease; age, variety, and root stock of orchard trees and vineyards. Operating costs must be ascertained as closely as possible as well as the amount of taxes assessed against the security. Consideration must also be given to the accessibility to markets, transportation facilities, and the availability and cost of hired help.

The appraiser has studied the Farm Loan Act, and all of the literature available—soil maps and reports of the area in which he is to work, and is supplied with soil maps and other maps, stationery, report forms, pumping cost tables, data on irrigation and drainage districts, tables of selling prices of products for the last 15 years, a list of local national farm loan associations with names and addresses of officers, a compass, mechanical counter, protractor, scale, tape, triangles, sketching board, cross section paper, tracing paper, and a soil auger.

Qualifications of a Land Bank appraiser include farm experience, knowledge of soils, a credit viewpoint, investigational and analytical ability, tact, independent judgment, ability to listen rather than to talk and give advice, common sense, decision, and ability to make a clear cut and complete report.

Method of Valuation

While income and a capitalization of net income, especially on rental basis in areas where farms are rented, are important factors in determining the value of a farm, comparison with other farms as to earning power, home value, and salability is also an important thing to consider in attaining consistent standards of lending, and justice to all applicants. Because of uniformly good soils, stable earnings, adaptability to profitable crops, and general desirability there are certain farms in nearly every neighborhood which have a fairly definite, known normal value. These figures—like capitalization of net income—are guides used by good appraisers in placing values on other properties. The opinions of men of good reputation and knowledge of local conditions are also considered along with other factors.

The selection of a rate for capitalizing net income as a check on value depends on the hazards or lack of them in the particular farm, and in this there is need for much good common

sense. The use of an arbitrary rate is never recommended. Some investors might be satisfied to base the value of a well-located and desirable range property which has a record of renting at a certain price per acre over a long period of years and where it can be estimated that this will continue indefinitely, on a 5% or 6% rate. A property requiring more supervision and management should probably be considered at an 8% or 10% rate; and hazardous orchard enterprises at perhaps as high as 18% or even higher, the latter being based usually on the net earnings of an owner since such properties are ordinarily not rented.

The appraiser's objective is to get the information detailed in his report and from this to arrive at a value of the property warranted by its probable future average normal producing ability.

In order that he may recommend a Federal land bank loan there must be ample evidence that the property under average management and normal conditions will be able to support a farmer and his family, pay taxes, upkeep, and running expenses, and produce enough in addition to meet the installment payments and interest for retiring the loan on a 10, 20, or 33 year amortization plan. The appraisal may show income in excess of this—but that much is essential.

A Specific Case

Let me illustrate how an appraisal is made by following through a hypothetical case of a man who owns an orchard and wants to borrow $2,000.00 to pay a bank debt. The details have purposely been made almost ideal—good soil, cheap irrigation, water ample in amount, good trees, favorable climate, etc.

Let us assume that J. R. Jones has this 40-acre prune orchard. It has been a good producer and he has made money enough from it so that he should be out of debt—but conditions during the past few years—together with investments in securities during the "boom," resulted in a mortgage on which the local bank is forcing payment.

Other banks in his territory are not interested in increasing their loans on farms. The same is true of private investors.

There is a local National Farm Loan Association in the county in which the Jones' orchard is located. He visits the Secretary-Treasurer of this local association and makes formal application for a Federal Land Bank loan.

The appraiser meets Mr. Jones, and asks him to point out the boundaries of the 40-acre property.

In this case it is easy to identify the property. It is a 40-acre tract in the corner of a section. (The section corner has been noted by the appraiser on his county map as he drives up to the orchard.) In order to be sure of the acreage, however, he uses his mechanical counter to check his steps as he and Jones go down one side of the orchard. The distance from the center of the road to the corner checks correctly and he notes this on his appraiser's work sheet. This is a copy on green paper of his final appraiser's report. A check is also made of the paces along the other side of the property.

This gives the appraiser the location of the farm, a check on the acreage, the type of farm, condition of the roads, and the general condition of the neighborhood and surrounding farms.

As he goes along he asks Jones about water conditions (domestic and irrigation) and the frost hazard. He notes condition of trees and their age, variety, root stock; checks this by his own knowledge, discusses red spider,

brown apricot scale, die back and other prune diseases. Gets frank opinion from Jones on these subjects. Looks for gopher and squirrel damage; notes pruning practice; makes count of trees and notes percentage of missing trees; notes distance apart; also notes the ownership, condition of, and crops on adjoining properties.

Coming back from checking the acreage, and while crossing the orchard, several holes are bored with the soil auger.

Information has now been obtained to complete the report as regards topography—which is level river bottom; and soils—fine sandy loam, the 6-foot borings showing no difference in texture to that depth. There is ample evidence that the information in the soil report of the area to the effect that this is a part of a deep, rich, alluvial fill—is correct. There is no hardpan, no evidence of alkali—no soil hazards. Native vegetation was heavy oak timber. There is a wood lot on an adjoining farm which confirms this. The appraiser finds on inquiry of Jones, that no oak root fungus has developed in this neighborhood, and confirms this opinion from other sources. Any other factor about which there is doubt is checked by the appraiser with local authorities.

The condition of the farm has been noted as "good." There is evidence of careful management everywhere. Things are "picked up"—machinery is housed—fences in good repair—gates "hang" as they should. The orchard is not clean cultivated, but vegetation has been allowed to grow deliberately for humus replacement.

The farm is big enough for a satisfactory unit—40 acres, and while Mr. Jones has time to work on the outside with his tractor, income is enough to support the family satisfactorily.

The appraiser notes that there is ample equipment with which to operate the property, including dehydrator, modern spraying outfit, tractor, plows, discs, harrows, pruning shears and saws, wagons, picking boxes, trays, and a well-equipped small shop.

When Jones is showing the appraiser through the house he meets Mrs. Jones, and she tells him how proud she is of her home and yard. He finds that both she and Mr. Jones take an active part in local affairs. They have two boys and two girls, all members of 4 H Clubs. They help with pruning, spraying, picking, and irrigating. Whether or not a farmer stays on a farm and pays off his loan depends to a considerable extent on his home life and the attitude of the wife toward life on the farm.

Buildings are adequate; a comfortable house, machine sheds, garage, and barn—ample in size and in good repair.

The appraiser finds that Jones has owned the farm for 20 years—which fact he verifies at the abstract office.

The domestic water supply is a well —40 feet deep—through blue clay at 33 feet into gravel. A pressure system supplies the house and yard. Rainfall is 20 inches annually, and all in the winter.

Irrigation is from a gravity system —an irrigation district with no bonded debt—annual cost of water $2.50 per acre—for 4 acre feet—if needed. This is a very satisfactory supply and the cost is low.

Drainage is also satisfactory—a natural slough deepened and maintained by the irrigation district quickly takes away surplus water used in irrigation.

The applicant tells the appraiser, as they walk over the place, that he was born on a nearby ranch—bought this place 20 years ago—and has developed it himself. His own labor, profit from

the ranch, and money earned from working on the outside have provided the necessary funds. The appraiser notes on his work sheet that farming methods, management, and business ability all appear good.

Checking his financial statement the appraiser finds that the applicant figures his net worth ample, and his debts—only the loan of $2,000.00 applied for on the 40-acre ranch, or $50 an acre. There are no contingent liabilities. This applicant is in good financial condition (appraisers frequently find applicants hopelessly in debt—owing more money than the value of the farm, in which case debts must be scaled or the applicant cannot be refinanced). The appraiser will complete the applicant's financial statement on the appraiser's report after he arrives at a value of the farm. Appraiser later checks moral and credit risk of applicant with stores, banks, and individuals. In this case he finds the applicant satisfactory in both respects. "Moral risk" refers to intent to pay, "credit risk" to ability to pay.

The purchase price of the farm 20 years ago was $150.00 per acre. There were no trees and no buildings on it then. Since purchasing the place applicant has added $7,000.00 in buildings.

No farms or orchards have been sold in the neighborhood recently, but similar orchards are valued at $400.00 to $500.00 per acre.

The appraiser estimates the life of a prune orchard on this deep rich land, with ample irrigation water and trees properly sprayed and pruned to be 40 years. There are orchards in the area in good bearing which are older. He estimates yields as follows:

38 acres prunes average yield for 40-year life of orchard—2 tons dry prunes per acre a year.

Average price per ton $80.00.

Gross average annual value 38 acres at $160.00—$6,080.00.

These figures are checked by production reports of the applicant, records of other orchards on similar land, dried fruit houses, and fruit associations.

The income and expense statement is as follows:

Annual cash sale—prunes		$6,080.00	
(poultry, milk and garden not taken into account, although if included, would increase income figures) ...			$6,080.00
Operating expense..	$3,950.00		
State and county taxes	200.00		
Water cost	100.00		
	$4,250.00		$4,250.00
Net balance to applicant			$1,830.00

Using a capitalization rate of 10% as a check this gives a value to the orchard of $18,300.00, or $480.00 an acre for the 38 acres (a capitalization rate of 12% would give a value of $400.00 per acre).

This checks closely with normal selling prices.

The appraiser measures the buildings, and goes through the house. He finds the barn 30x40—well built—in good condition—1,200 square feet. He makes the following notations:

The barn at 40c per square foot....	$ 480.00
One hundred-ton dehydrator — tile—no insurance—cost	3,000.00
A machine shed 20x60—1,200 square feet open construction @ 20c per square foot	240.00
The house is modern—bath—sleeping porches—work porch 30x50—1,500 square feet—cost $4,000, @ $2.00 per square foot	3,000.00
The buildings are insured for a total of $3,000 (This is the figure used by the appraiser).	

Federal Land Bank loans are based on 50 percent of the appraised normal agricultural value of the land mortgaged and 20 percent of the appraised

value of the permanent insured improvements thereon.

Then comes the valuation of the land, which the appraiser arrives at by a combination of comparison with values of other farms in this and other areas, earnings, local opinion, and good judgment.

38 acres river bottom land—planted to French prunes 12 years old—myrobolan root—land also adapted to sugar beets, alfalfa, truck crops. If bare land, probable rental value $30.00 to $40.00 per acre annually —38 acres at $450.00	$17,100.00
2 acres in roads, building site, yards etc., nominal at $100.00	200.00
Value of buildings to farm	3,000.00
Value of farm	$20,300.00

The loanable amount is determined as follows:

50% value of land—$17,100.00	$ 8,550.00
20% value of buildings—$3,000.00	600.00
Maximum loanable	$ 9,150.00
Amount applied for	$ 2,000.00
Term of loan recommended—where land is in trees (on account of life of trees and hazard of orchard business)	20 years

The appraisal report has a place for a plat, schedule of soil borings, and a listing of adjoining farms with type and general condition.

All factors are purposely favorable in this appraiser's report, but it illustrates the procedure.

On other farms on which appraisals are made the values are materially reduced by frost hazard, alkali, drainage, excessive water costs due to high pump lifts, hardpan shallow, unproductive soil, noxious weeds, insect pests, plant diseases, unfavorable climate; and the percentage loaned is reduced in the case of shiftless and inefficient operators, poor moral and credit risk of operators or owners, unproven districts, poor business management, and other unsatisfactory factors.

Good common sense is one of the most important factors in the equipment of every successful farm land appraiser. No matter how much information on agricultural subjects he may possess, nor how well he may know a territory, he must be able to size up a situation from a practical standpoint. He must keep prominently in mind at all times the idea that value is determined by the estimated future earnings of the property, at least for the term of the loan in question, and attendant factors of salability and desirability for home and investment purposes.

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Value of Illinois Farm Land

By H. C. M. CASE

WE can agree, no doubt, that over a long period of time the value of farm land should be based upon the earnings from the farm business. It appears that this basis was not adhered to in evaluating corn-belt land up to a few years ago. Farm land, in the newer agricultural regions, has been evaluated on the basis of anticipated selling price rather than expected earnings. In general, all countries as they become older and reach a fully matured agriculture have experienced a change in the attitude toward valuing farm land, with buyers giving more attention to expected earnings as the basis for land values. The eastern part of the United States had apparently attained this stage of economic development some years ago, while it seems that the corn-belt is rapidly making this change following the period of inflated land values during and immediately following the World War.

In attempting to evaluate farm land on the basis of expected earnings there is apt to be a lack of a close distinction between the value of different grades of farm land. The most productive land is generally undervalued relative to the less productive land unless it may be in periods of unusual optimism regarding land values. I would like to have time to develop that thought. It applies to either the purchaser or the lending agency. The statement that good land is apt to be undervalued relative to lower grades of land in the same community is verified by studies of land values and earnings.

The problem in the future, as it applies to this part of the United States, is two-fold: First, land appraisals must be based upon expected earnings rather than the anticipated selling price; second, the expected earning power of the land should be calculated on the basis of productive power for the different grades of land. If this could be accomplished it would lead to a closer distinction between the different grades or classes of land in making farm loans. At this point farm records should come to have an increased value.

Expected Farm Income

It is my purpose to present a method of arriving at the expected income and expenses on the most productive Illinois farm land based on pre-war levels of prices. In arriving at land values it is necessary to assume a certain price level or to accept results of past records at actual prices as they were. In this discussion information secured from closely supervised farm financial records will be used to indicate the income and expenses which may be expected. The records are of 280 farms on the better grade of land in Livingston, McLean, Tazewell, and Woodford Counties for the years 1929, 1930, and 1931[1] and since these records are of farms whose operators are keeping records and carefully studying their business, the results are above the average even on the better grades of land. Averages of all 280 farms will be used. The average prices for 1910 to 1914 will be used in calculating the expected income and expense.

This article was presented by Prof. Case at a Conference for land appraisers at the College of Agriculture, University of Illinois, September 25-26, 1933, and is reproduced here by special permission.—ED.

[1]These 280 farms are part of the farms included in the Farm Bureau-Farm Management Service, farm management project developed by the University of Illinois in cooperation with county farm bureaus in the counties named. The cooperating farms pay about two-thirds of the cost of the service, including the full-time employment of a well-trained farm management field man who visits each farm several times a year and assists in keeping, summarizing, and interpreting the results of the financial record for each farm. (See mimeographed reports of the Department of Agricultural Economics, Nos. M-339 and M-383.)

A few of the prices received by Illinois farmers for farm products are shown in Table 1.

Table 1

Average Annual Prices Received by Illinois Farmers for Their Products, 1910-1914 Inclusive[2]

Product	*1910-1914 Incl.*
Corn, per bushel	$ .580
Oats, per bushel	.374
Wheat, per bushel	.916
Rye, per bushel	.730
Barley, per bushel	.634
Hay, per ton	13.960
Butter, per pound	.254
Eggs, per dozen	.210
Chickens, per pound	.112
Hogs, per 100 pounds	7.44
Cattle, per 100 pounds	5.94
Veal Calves, per 100 pounds	7.18
Sheep, per 100 pounds	4.26
Lambs, per 100 pounds	5.93
Horses, per head	119.00
Potatoes, per bushel	.826
Apples, per bushel	1.032
Soybeans, per bushel[3]	.950
Pasture, per day[4]	.065

The expected income based upon these records was determined by using (1) the value of the average quantity of grain sold for the three years at pre-war prices, and (2) the value of feed fed to productive livestock, determined by the quantity of feed actually fed valued at pre-war feed prices. The income from the feed fed to productive livestock was determined by using the average return for feed fed to productive livestock on this group of farms for an eight year period, 1925 to 1932 inclusive.

The basis used appears conservative and is the most accurate of the methods available for estimating income. The conservatism of the approach is shown by the fact that the production of grain for these three years is lower than normal. For example, the three-year average yield of corn was 44 bushels per acre, while the average for eight years, 1925 to 1932, was 48.8 bushels for the group of farms included in this project. The average returns for feed fed to productive livestock, which were $141.00 for each $100.00 worth of feed fed, are definite and do not involve estimates of feed requirements and livestock efficiency. In other words, it shows the experience of actual farmers over a period of years long enough to represent normal conditions. Table 2 indicates the expected income from various sources for the average farm, calculated on the basis just explained. The $23.63 income per acre represents the expected income based upon 1910 to 1914 prices. If the average prices for 1905 to 1914 are used, the expected income is $22.55.[5]

Another way to calculate the expected income is to use actual acreages and yields of the various crops grown and to value the crops at pre-war prices. This method should have special application in evaluating land not operated by the owner and where his share on the best land normally represents one-half of the crops. Table 3 shows the expected income on this basis. The difference in the income per acre between the typical 240-acre farm (Table 2) and the farm as shown in Table 3 is due to livestock. Of course the difference will be offset, to a certain degree at least, by the difference in the expenses because of livestock.

Expected Farm Expenses

It is more difficult to calculate expected expenses, with the same degree of accuracy, than it is to calculate expected income. This great difficulty is due to the lack of definite prices of items

[2]Prices of Illinois farm products from 1866 to 1929. Bulletin 351, University of Illinois, Agricultural Experiment Station, Urbana, Illinois.
[3]Average price for 1929-30-31.
[4]Estimated value.

[5]The expected income per acre for the 56 most profitable of these 280 farms, calculated the same way, amounts to $28.07 when the 1910 to 1914 prices are used. The income per $100.00 worth of feed fed to productive livestock averaged $156.00 for these farms. Since the average per acre expense on these 56 farms was less than for the average for the 280 farms, the difference in the evaluation of the land would be proportionately greater than the difference in the expected income. It should be recognized, of course, that the difference is due largely to the ability of the present operators of the land and the way the farms have been managed for some years.

purchased and the necessity of estimating the value of operating capital, and operator's and family labor.[6] For April and May of this year the index of the "prices paid by farmers for commodities bought" was equivalent to the 1910

Table 2

Value of Products on a Typical 240-Acre Farm Based Upon the Average of 280 Farms on Higher-Valued Land in Livingston, McLean, Tazewell, and Woodford Counties, 1929-30-31, Calculated on the Basis of Actual Crop Production and Actual Returns Per $100.00 Feed Fed to Productive Livestock, Using 1910-1914 Illinois Farm Prices.

Crop Produced	*Acres produced*	*Yield an acre*	*Total production*	*Amount sold*	*Income from part sold*	*Value of part used*
Corn	105	44.00	4,620.00	2,390.00	$1,386.00	$1,293.00
Oats	45	44.00	1,980.00	1,063.00	398.00	343.00
Wheat	16	24.00	384.00	291.00	267.00	85.00
Barley	7	30.00	210.00	......	......	133.00
Soybeans	7	20.00	140.00	......	......	133.00
Hay	15	1.60	24.00	......	......	335.00
Pasture (days)	30	81.80	2,454.00	......	......	160.00
Farmstead, etc.	15	....	......	......	......	......
TOTAL	240	....	......	......	$2,051.00	$2,482.00
Total feed fed to horses						335.00
Feed fed to productive livestock grown on farm						2,147.00
Feed purchased fed to productive livestock						356.00
Total feed fed to productive stock						2,503.00
8-year average of returns per $100 feed fed to productive livestock						141.00
Total returns for feed fed to productive livestock						3,529.00
Total returns of feed crops sold						2,051.00
Miscellaneous farm income						92.00
Total returns for the entire farm						5,672.00
Total returns per acre						23.63

Table 3

Average Value of Products on 280 Farms on Higher-Valued Land in Livingston, McLean, Tazewell, and Woodford Counties, 1929-1930-1931, Calculated on Basis of Crop Production, Using 1905-1914 and 1910-1914 Illinois Farm Prices.

ITEMS OF INCOME	AVERAGE OF 280 FARMS				ONE-FIFTH MOST PROFITABLE FARMS			
	ACRES	YIELD PER ACRE	VALUE AT 1905–14 PRICES	VALUE AT 1910–14 PRICES	ACRES	YIELD PER ACRE	VALUE AT 1905–14 PRICES	VALUE AT 1910–14 PRICES
Corn	105.1	44.2	$2,541.00	$2,694.00	116.9	47.2	$3,020.00	$3,202.00
Oats	43.6	43.9	723.00	718.00	41.3	47.6	740.00	734.00
Wheat	16.0	24.3	350.00	355.00	19.3	25.8	450.00	457.00
Barley	6.7	29.2	125.00	124.00	9.9	31.7	200.00	199.00
Soybeans, Misc. grain, Other Crops	10.5[7]	....	213.00	238.00	14.3[7]	....	336.00	350.00
Hay	12.8	1.6	265.00	293.00	13.3	1.8	304.00	336.00
Pasture	34.0	2,781.00	167.00	181.00	37.2	2,950.0	177.00	192.00
Farmstead, etc	10.2	....	....	....	10.9	....	....	....
Total crops	....	....	4,384.00	4,603.00	....	....	5,227.00	5,470.00
Misc.[8]	....	....	86.00	92.00	....	....	124.00	131.00
Total	238.9	....	4,470.00	4,695.00	263.1	....	5,351.00	5,601.00
Crop income per acre	....	....	18.35	19.27	....	....	19.87	20.79
Total income per acre	....	....	18.71	19.66	....	....	20.34	21.29

to 1914 level. For 1932 the same index averaged 109. For the three years considered in the above records, this index was 155, 146, and 126 respectively, or an average of 142.3.

[6]A pre-war price level for farm prices was assured as the basis for the products sold. The price level of the expense varies with different anticipated or assumed conditions.

[7]Calculated on basis of per acre income from four main crops.

[8]Labor off farm and miscellaneous income. Calculated on basis of average price received by farmers for the three years. (1905-1914 = 100.)

Expenses, not including operator's or family labor or interest on capital invested, were $9.07 an acre for the average of 280 farms. This was the expense when the price index of commodities bought by farmers was 142.3. With the index of 142.3 reduced to 100, which represented the period 1910 to 1914, the acre cost would be reduced to $6.37. The records for 1932 from 430 similar farms in the same part of the state show practically the same results. The expenses in 1932 were $6.82 per acre when the expense index stood at 109. With the expense index of 109 reduced to 100 this per acre expense would be reduced to $6.26. It is significant that the two methods of computing farm expenses result in so nearly the same figures: $6.37 and $6.26 per acre.[9] If farm costs are not on a parity with the price of farm products, but above parity, these acre costs should be increased proportionately.

These expenses do not include the value of the labor of the operator and members of the family. One method of evaluating this labor is on the basis of normal family expenditures. The farm family must receive an income to cover its living expenses. It seems logical to assume that the average cash expenditure for representative farm families would be a fair standard by which to evaluate the labor of the operator and members of the family. According to records kept for the Department of Home Economics, University of Illinois, farm family expenditures for 1929, 1930, and 1931 averaged $1,144.00[10] or, on the basis of the typical 240-acre farm, $4.77 per acre. The income in excess of various expenses discussed above may be regarded as return to the capital invested.

Expected Net Farm Income

On the average of the 280 farms, $14,854.00 was invested in things other than land. There was $3,048.00 in livestock, $3,675.00 in feed, grain and supplies, and $2,164.00 in machinery and equipment when evaluated on the basis of the 1929, 1930 and 1931 price level. At 6 percent interest, the charge for these investments, not including the improvements, is $2.22 per acre. Adding $6.37 farm expenses, $4.77 family expenses, and $2.22 interest, the total expense is $13.36. Deducting these expenses from the $23.63 expected income the net income per acre is $10.27. Capitalizing this at 5, 6, and 7 percent, the value of the land and improvements is $205.00, $171.00, and $147.00, respectively.[11]

The expected income on the average of 280 farms computed on a strictly grain basis as shown in Table 3 is $19.66 per acre. When the expected income and expenses are divided between landlord and tenant, according to customary practices, the net income per acre to landlord is $7.26 per acre (Table 4). When this income is capitalized at 4, 5, and 6 percent[12] the value of the land

[9]If taxes ($2.09) are deducted the average expenses of $9.07 per acre, not including operator's or family labor, would be $6.98 for the farms for 1929-1930-1931 and $5.14 for the farms for 1932. (Taxes in 1932 were $1.68 per acre.) This represents a decrease of 19.6 percent in the taxes between the two periods. Taxes for the United States, as shown by United States Department of Agriculture, were reduced by 19.5 percent from 1929 to 1932. The valuation of taxable farm property (land and improvements) in Illinois was decreased 23.25 percent from 1929 to 1932. The valuation of taxable farm property in the four counties included in this study was reduced 28.60 percent during the same period. The cost of things other than taxes was reduced by 26.3 percent from the 1929, 1930, 1931 average to 1932 ($6.98 to $5.14). The main drop in taxes came in 1931 and 1932. In view of these facts it seems logical to conclude that the reduction in tax costs was approximately the same as for other costs.

[10]Illinois College of Agriculture Adjustment Conference Booklet, 1932, page 35.

[11]When the investment in improvements is figured as an expense at 6 percent the total expense per acre would be $14.85, leaving $8.75 net income. Capitalizing this net income at 5, 6, and 7 percent, the value of the land alone would be $176.00, $146.00, and $125.00 per acre respectively. When the expected income and expenses on the 56 most profitable farms of this group are calculated by this method, the capitalized value would be increased to $265.00, $221.00, and $189.00.

[12]The capitalized rate is reduced 1 percent because the return to the landlord is net. Taxes which normally represent about 1 percent, are already paid. The landlord will be satisfied with a smaller return on his investment than would be necessary for the owner-operator to meet interest commitments and amortize the loan over a period of years.

alone is $182.00, $145.00, and $121.00 which corresponds closely to the value of land as determined in footnote nine for the average of 280 farms.

Table 4

Average Value of Products Sold and Expenses on 280 Farms on Higher-Valued Land in Livingston, McLean, Tazewell, and Woodford Counties, 1929-1930-1931, When Divided Between Landlord and Tenant According to Customary Methods of Leasing, Using 1905-1914 and 1910-1914 Illinois Farm Prices for Products Sold.

	Average of All 280 Farms			
	1910-1914 Price Level		1905-1914 Price Level	
	Tenant	Landlord	Tenant	Landlord
Income from crops	$2,211.00	$2,211.00	$2,108.00	$2,109.00
Income from pasture	....	181.00	....	167.00
Miscellaneous income	92.00	....	86.00	....
Total income	2,303.00	2,392.00	2,194.00	2,276.00
Total income per acre	9.65	10.01	9.18	9.53
Total expense per acre[13]	4.08	2.75	4.07	2.75
Net income per acre	5.57	7.26	5.11	6.78
Operator's net income	1,337.00	....	1,226.00	....
Landlord's per acre income capitalized at				
4 percent	....	182.00	....	170.00
5 percent	....	145.00	....	136.00
6 percent	....	121.00	....	113.00

[13]Landlord's expenses include taxes $1.69, farm improvements $1.02, and miscellaneous expense 4 cents per acre. Operator's expenses include all other farm expenses. The farm income is adjusted to a strictly grain farming basis, but the expenses represent the actual expenses incurred on these farms. The landlord's share represents conditions as they actually are under typical grain share lease except that one-half of the value of hay and pasture are credited to the landlord in the place of a set cash rent which is not materially different from normal rent for these items. The tenant's share shown in the above table is not pertinent to this illustration.

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Court Decisions

Contracts with Municipal Corporations

By ANDREW C. HAMILTON, Member Illinois Bar

A BIG contract to do appraisals for the City—it sounds like the answer to an appraiser's prayers in these days But use care in accepting employment to do professional work for a municipal corporation. More than one appraiser has had costly and unpleasant experiences with such undertakings.

W. L. Prouty was engaged without written contract to perform expert appraisal services for the city of Erie, Pa., in connection with the 1933 Triennial Assessment. He was thus employed by the Chief City Assessor. He thereafter rendered the services contracted for and sent his bills for a substantial but reasonable fee to the city Finance Director for approval and payment.

The Finance Director refused to approve or to pay the bills for the reason that they were not authorized by formal consent of the City Council. Therefore the City Council passed a resolution in proper form ratifying and confirming the employment of Mr. Prouty for such appraisal services.

The Finance Director still refused to approve the bills and execute the necessary warrant for payment. The City Solicitor rendered an opinion that the "Council may ratify the act of a subordinate employe in the matter of employment of services for the purposes of his office where the same is necessary and within the scope of his employment." Still Mr. Prouty could not collect his fee.

Thereupon Mr. Prouty thru his attorney procured a writ of mandamus against the Finance Director. In answer thereto the Finance Director thru his attorney admitted all of the circumstances as they had occurred but said that the execution of a warrant for the payment of the fees of Mr. Prouty was specifically prohibited by the statutes of the State of Pennsylvania.

The statute cited read as follows:

> "Council shall prescribe, by ordinance, the number, duties, and compensation of the officers and employes of the city. No payment of such compensation shall be made from the city treasury, or be in any way authorized, to any person except an officer or employe elected or appointed in pursuance of law. No ordinance shall be passed giving extra compensation to any officer, servant, employe or contractor, without previous authority of law. Any officer drawing or countersigning any warrant, or passing any voucher for the same, or paying the same, shall be guilty of a misdemeanor, and upon conviction thereof, shall be sentenced to pay a fine not exceeding five thousand dollars, and undergo imprisonment not exceeding one year." (Section 902 of Article 9 of the Act of June 23, 1931, P. L. 932 at page 956, as well as by Section 4 of Article 4 of the Act of June 27, 1913, P. L. 568 at page 576 Pennsylvania Statutes).

Note that the statute expressly prohibits the payment of compensation from the city treasury to any person except an officer or employee elected or appointed in pursuance of law. The Pennsylvania court held that it was evident that the legislature intended to prohibit just what had been attempted in this case—that is, the employment of high salaried professional experts without election or appointment pursuant to law, and dismissed the writ of mandamus (Decision in court of Common Pleas of Erie County, Pa., 108 February Term 1934).

Whatever the results may be upon the appeal of this particular case to a higher Pennsylvania court, the situation in itself serves as a warning to all who seek to enter into contracts with any municipal corporation.

It must always be remembered that a municipal corporation like a private corporation is an artificial entity created by statute and having limited powers granted to it by its charter or by the general statutes and the constitution of the State within which the municipality is located. Of course every State has its own general municipal corporation act regulating the issuance of municipal charters. Neither these acts nor the interpretation of them by the local state courts, are uniform. Therefore, in every State certain general precautions must be observed in entering into any contract with a municipality.

The general rule is well settled, and is constantly enforced, that one who enters into a contract with a municipal corporation is bound to take notice of all limitations on its power to enter into contracts and also of the power of any particular officer or agency to make the contract. The charter or legislative act must authorize the contract either in express terms or by necessary or fair implication, otherwise the contract is void and unenforceable. Moreover, a person dealing with a municipal corporation through its agents must protect himself by determining whether or not the agent has authority to enter into the contract contemplated.

Important Questions

There are a number of questions to be considered in determining the validity of a contract with a municipal corporation.

First, does the municipal corporation have express, implied, or inherent power to enter into the particular contract contemplated, or is the contract one which is beyond the scope of its powers, or perhaps actually prohibited by charter or by statute, as in the Prouty case. If the contract is such that the municipality has no power to make it, either express, implied, or inherent, or if the contract is actually prohibited by charter or statute, then the contract cannot be enforced by the person attempting to deal with the municipality.

Second, assuming that the contract is one which the municipality has power to enter into, then it must be determined whether the contract was entered into by the proper department, board, committee, officer, or agent. Since one who deals with a municipal corporation is charged with notice of the extent of the powers of municipal officers and agents, it naturally follows that if the particular department, board, officer, or agent has in fact no power to bind the municipality, then the municipality is not liable on the contract unless the contract has been properly ratified by the municipality or unless the municipality has accepted benefits or so conducted itself in other ways as to estop a denial of the validity of the contract.

Third, the contract must be entered into in the method prescribed by the statute or by the municipal charter. Assuming that the contract is one which the municipality has power to make and that it is entered into by the proper department, board, officer, or agent, it may still be an invalid contract because certain formal conditions were not observed, or because there was no ordinance authorizing the contract. In some jurisdictions the courts have held that such a contract can thereafter be ratified by the municipal corporation—others hold that it cannot. Some States permit recovery of the reasonable value of the services on the basis that there is an implied contract to pay for them. Others refuse to recognize the existence of any liability by implication. The courts are inclined to favor the theory that provisions restricting the power of the municipality to enter into contracts exist for the purpose of protecting the citizens from unjust or ill-considered contracts and that if the municipality

is permitted to disregard them and to permit the payment of compensation under such a contract on the basis of ratification, estoppel, or implied contract, then the statute or charter can always be evaded and the protection is lost. Hence, the tendency is to hold such contracts unenforceable against the municipality. However, where the provisions of the statute which have been violated are merely concerning the mechanical details of the process of entering into the contract such as matters of signature, counter-signature, endorsement of approval, seal, etc., it has been held that a failure to comply with such provisions will not preclude recovery by the person contracting with the municipality after he has performed his part of the contract.

The General Rule

It may be stated, as a general rule, that if upon examination of the charter and the applicable statutes there appears to be no restriction forbidding the municipality to enter into the contemplated contract, then the municipality may be regarded as having power to make any contract necessary to enable it to carry out the powers expressly conferred upon it and all other powers essential to enable it to perform the duties of a local government for the benefit of its inhabitants.

This final word of caution is found in a quotation from Dillon on municipal corporations. (Dillon on Municipal Corporations, Vol. 2, paragraph 797):

> "But a subsequent ratification cannot make valid an unlawful act without the scope of corporate authority. An absolute excess of authority by the officers of a corporation, in violation of law, cannot be upheld; and where the officers of such a body fail substantially to pursue the material requirements of a statutory enactment under which they are acting, the corporation is not bound. In such cases the statute must be strictly followed, and a person who deals with a municipal body is obliged to see that its charter has been fully complied with: when this is not done, no subsequent act of the corporation can make an ultra vires contract effective."

At the risk of being accused of promoting business for the legal profession this moral may be deduced from the story of the Prouty case—*Consult your lawyer before entering into a contract to perform appraisal services for any municipal corporation or any other public or semi-public corporation.*

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Appraisal of a 13-Flat Building

By JAMES R. DAVIDSON, M.A.I. and C. D. DAVIDSON, M.A.I.

THE disrupted fabric of real estate values in most cities today necessitates a more fundamental approach to the valuation of real estate than ever before. Doubt exists in the minds of many owners as to whether any real estate has value, and few of our clients believe that values are either definite or ascertainable. The nice balances previously existing between land values, building costs, and income are replaced by unknown relationships, impossible to determine in the absence of sales, uniform rentals, and stable building costs. Available data concerning the few sales being made and as to mercantile leases actually in force are incoherent and not to be reconciled. Meanwhile the country emerges from the pit of a terrific depression into an unpredictable future.

Seeking valuations of real estate under these trying conditions, the thoughtful appraiser is in a humble mood. He knows, better than any layman, that the results of his best efforts are none too reliable. Still, there is need for his advice and counsel in the disposition of real estate by owners, mortgagees, trustees, liquidators, and law courts; and he is called upon, not because of any claim to infallibility, but because his efforts are the best obtainable in his community.

Groping about in the fog for a means of giving our clients something useful, we have sought a basic approach, using only actual facts, generally accepted beliefs or theories not yet disproved, and such estimates of future conditions as are broad enough to include the entire range of well-informed current opinion. The result of such a method is necessarily an approximation, oftentimes rough. But we believe it to be essentially right and far more credible or "provable" than that obtained by the capitalization of, or extraction of present worth of, a "stabilized" future income. And for the majority of problems confronting the local courts, or our clients, it is sufficiently definite to afford a solution.

We submit herewith an appraisal report in which we have attempted a straightforward fundamental approach to a concrete problem. It is offered, not as a suggested formula nor as a model, but on its own merits and in all humility, with the hope that it contains the germ of a helpful idea and that it will provoke criticism or suggestion.

Certificate

Mr. Harry Grant Atkinson
59 East Van Buren Street
Chicago, Illinois.
Dear Sir:

Pursuant to your request, we have made a study of the property located at 1164 Connecticut Street, legally described as Lot 25, Block 14, Gary Land Company's Tenth (10th) Subdivision, Gary, Lake County, Indiana; and in our opinion the value of the property is as follows:

$20,000.00

We have appraised the property as a whole, owned in fee simple, unencumbered by any indebtedness and under responsible ownership and under competent management, as of May 11, 1934.

We, the undersigned, have no present or contemplated future interest in the property appraised.

We do hereby certify that to the best of our knowledge and belief the statements and opinions contained herein, subject to the limiting conditions set forth, are correct; also, that this ap-

praisal has been made in conformity with the standards of practice of the National Association of Real Estate Boards.

James R. Davidson, M.A.I.
C. D. Davidson, M.A.I.

Gary, Indiana, May 11, 1934.

Description of the Property

Site and Location:

The site is a 32x125 ft. plot on the west side of Connecticut Street next to the corner of 13th Avenue, Gary,[1] Indiana. Street and alley are concrete paved and the sewer and utilities are in. The block is zoned for business use, but the existing improvements are residential. It is a part of a large well laid-out restricted subdivision and has good access to stores, churches, and schools. It is only two blocks from Broadway, Gary's main business thoroughfare, and is close to the so called "Central" business district (this district is not to be confused with the city's central shopping district which is about ten blocks to the north). There is a small public park across from the property. The subdivision was originally put on the market by the U. S. Steel Corporation for foreign-born steel mill employes and is largely occupied by them. It is only partly built-up, having been caught midway in its development by the slump.

In general, it may be said that the section of the city in which this white, restricted subdivision is located is occupied by colored and foreign-born steel workers and, having been pretty solidly built up before the zoning law was enacted, contains a heterogeneous mass of houses, flats, and business buildings. The tendency during the past six or eight years has been an exodus of the white population to other sections of the city. However, we believe that the size of this subdivision, the existence of another similar development in the Central District, and the strong paternal management of the same will tend to combat the general trend in these particular subdivisions, perhaps keeping them fairly static.

Improvement:

The improvement is a three story and basement brick apartment building containing 13 apartments. There is one 5-room, one 4-room, five 3-room, and six 2-room units. Each apartment has a complete bath.

The building is well-constructed, having solid brick foundations and exterior walls well laid up and properly bonded. The first floor is of concrete over steel joists and the balance is of wood joist construction. The heating plant consists of a sectional boiler and a vapor system fitted with Dunham traps and accessories. It appears to be of adequate size. Some minor repairs are needed. Hot water is furnished by a coal heater of adequate size.

Finish floors throughout the building are of oak and the trim is of gumwood. Bath floors are tiled.

The baths are equipped with inset enameled front tubs, pedestal lavatories, and washdown toilets.

All of the apartments have kitchen cabinets and some are equipped with ranges and refrigerators.

The building is in poor to fair condition and appears to be entirely occupied. From the information available the building seems to have been built sometime between 1927 and 1929.

Basis of Valuation

This is an investment property pure and simple; and, like all investment

[1] Gary is an industrial city of some 100,000 population, representing about 50 different races and nationalities, founded in 1907 by the United States Steel Corporation. While it has a cluster of small industries, its business is the manufacture of steel. There are approximately 12,500 single family dwellings and the same number of apartment units. While we have no authentic recent survey, it is generally believed that there are practically no vacancies. The city covers about 30 square miles of territory.—Author.

properties, has no real value other than that supported by earnings during its useful lifetime.

From its location, and from the character of its surroundings and the occupancy of its neighborhood, rather than from the improvement itself, we can definitely determine that its best use is that of homes for working men, almost entirely of foreign extraction, and predominantly of semi-skilled or unskilled occupations. Nothing indicates a future use by a higher income group.

The average wage of the group from which tenants for the property are available will place an upper limit on the rentals obtainable under normal vacancy conditions. The fact that new housing for this class of tenants can not be made to pay an attractive return will preclude over-building and keep rentals close to these upper limits.

In Schedule V we show a table of average weekly wages in the steel industry from 1913 to 1929. If we can depend on the generally accepted belief that an average workingman can allot twenty-five percent of his income to rent, we have an index to obtainable rentals for this class of property under varying economic conditions. It must be borne in mind, however, that these weekly wages as tabulated represent full time employment; hence, the figures set up in the schedule as allocable to rent are slightly high for years when full time employment was not general. In Schedule IV are shown capitalized values of the property at various rent levels. From this table, reasonably accurate estimates of earnings and value can be established for varying economic conditions (the three-room apartments are taken as an average worker's home and the other apartments valued in proportion).

At this point it is necessary to emphasize that no intelligent valuation of any property can be made without careful consideration of future conditions affecting it. The two future probabilities most greatly affecting this property are an increased price and wage level and an improvement in the general industrial situation. Higher wages and more hours of employment for wage earners in general, and steel workers in particular, will increase the earnings of this property. We are of the belief that, since the best efforts of the American people are directed toward the restoration of wages and employment, any conservative appraiser must reckon with the attainment of their objective as a definite probability in the not distant future. The mere existence of this probability gives the property a value in excess of that indicated by its present inability to earn.

These influences are qualitative rather than quantitative. We do not attempt to predict how far they will go nor to what extent they will affect the value of this or any other piece of real estate. The announced objective of the administration at Washington is to put the price level back to that of 1926. It is also contemplated that unemployment shall be reduced to the minimum necessitated by those chronically unable to hold jobs and those seeking new occupations because of the technological elimination of their old jobs. We are of the opinion that such a condition is well within the range of possibility over a period of time, but that any valuation of real estate based thereon should make allowance for the time element and should, moreover, not be regarded as conservative.

If we can assume that conservative, supportable opinion can be bracketed between the belief that the near future holds some measure of economic improvement with higher wages and prices, and the thought that a return

to the prosperity of, say, 1923 to 1929 is to be hoped for but is not a certainty, then we can, in the case of the property under consideration, apply the formula outlined above and arrive at an approximation of value that may be useful. Specifically, if we grant that an average weekly wage of $24.00 (or 60c per hour) is distinctly probable within the near future and that $36.00 per week (or 90c per hour) is a hope rather than a near probability *we can limit the range of our approximate values between* $15,000 *and something less than* $29,000. In consideration of the fact that $36.00 is the highest average peacetime wage ever paid in the steel industry and that this was on a basis of 54½ hours at 67.4c it might be safe to place the upper limit considerably lower.

We are of the opinion that any estimate of value of this property between $15,000 and $25,000 can be creditably supported. Any higher figure must be based on possibilities, not probabilities; a lower figure might indicate a pessimistic bias in the appraiser.

Inasmuch as an appraisal is a personal or joint judgment and since it is desirable that a single specific valuation be given, your appraisers have selected from within the above mentioned brackets the figure of $20,000.00.

No discussion of future fluctuations in the rate of return required on this type of investment by the great body of real estate purchasers is included herewith. It is assumed that those willing to accept a less return than the 10% heretofore expected will use the more conservative income estimates. The net effect of this would be to leave the range of possible valuations about the same.

Schedule I.

Replacement Value

The building, 26 feet wide and 104 feet long, less an offset 6½ feet by 14 feet, and 42 feet high, contains approximately 110,000 cubic feet of construction which we believe to be replaceable at 30c per cubic foot.

110,000 cubic feet @ 30c	$33,000.00
Less estimated depreciation, 15%	4,950.00
Sound Value	$28,050.00
The land, 32'x125', might have an approximate market value of	1,200.00
Fair replacement value	$29,250.00

or, in even figures, $29,000.00.

Schedule II.

Present income

The following figures are based on information supplied by tenants:

1—5 room apartment (occupied by Janitor) Rental Value	$ 15.00
1—4 room apartment	15.00
1—3 room apartment	15.00
4—3 room apartments @ $10.00	40.00
6—2 room apartments @ 10.00	60.00
	$ 145.00
Total Annual Rental	1,740.00
Less 10% vacancy and rent loss	174.00
	$1,566.00

Inasmuch as considerable discrepancy exists in the rentals as reported by the tenants and since the rental value would be higher if the property were under responsible ownership and competent management, we believe the actual present rental value of the property is approximately that set up in the first column of Schedule IV.

Schedule III.

Operating Expenses (Estimated)

Fuel 36 rooms @ $15.00	$ 540.00
Water (13 units at av. $1.00 per mo.)	156.00
Public lights (estimated)	72.00
Janitor ($20.00 per mo.)	240.00
Janitor supplies	25.00
Repairs	100.00
Decorating	150.00
Management	120.00
Building operation	$1,403.00
Taxes (est. $13,000 @ $3.18)	413.00
Insurance $25,000 Fire & Tornado $.032 and $0.22, 5 years basis	108.00
Total expense before depreciation charge	$1,924.00

Depreciation Charge

Before any income remaining after operating expenses is paid can be called net, an annual charge must be set up to cover replacement of the improvement at the end of its economic life. Since a straight-line charge takes no account of the use of the accumulating sum, it is unsatisfactory. Common practice is to set up a theoretical sinking fund. On a 34-year basis (the probable remaining useful life of this structure) at 4% this amounts to .013 per dollar of the value to be replaced. Inasmuch

as we have not reached an economic value for the building we cannot include it here. It is shown in Schedule IV for various building values.

Schedule IV.

Capitalized income at various wage and rent levels

Weekly wage	$16.00	$20.00	$24.00	$28.00	$32.00	$36.00	Actual Present
25% allocable to rent	17.00	22.00	26.00	30.00	35.00	39.00	Rentals
1—5 room	$22.50-$22.50	$30.00-$30.00	$36.00-$36.00	$40.00-$40.00	$47.00-$47.00	$52.00-$52.00	1 @ 15 $15.00
1—4 room	20.00- 20.00	26.00- 26.00	30.00- 30.00	35.00- 35.00	40.00- 40.00	44.00- 44.00	1 @ 15 15.00
5—3 rooms	17.00- 85.00	22.00-110.00	26.00-130.00	30.00-150.00	35.00-175.00	39.00-195.00	1 @ 15 15.00
6—2 rooms	15.00- 90.00	19.50-117.00	23.00-138.00	26.50-159.00	30.00-180.00	33.00-198.00	4 @ 10 40.00
							6 @ 10 60.00
	3 room flats taken as an average and priced at 25% of average wage. Others priced in proportion.						
Total Monthly Income	$ 217.50	$ 283.00	$ 334.00	$ 384.00	$ 442.00	$ 489.00	$ 145.00
Total Annual Income	2,670.00	3,444.00	4,056.00	4,608.00	5,304.00	5,868.00	1,740.00
10% Vacancy Allowance	267.00	344.00	405.00	461.00	530.00	587.00	174.00
Effective Income	2,403.00	3,100.00	3,651.00	4,147.00	4,774.00	5,281.00	1,566.00
Operating Cost Including Taxes and Insurance	1,924.00	1,924.00	1,924.00	1,924.00	1,924.00	1,924.00	1,924.00
Net Before Depreciation Charge	479.00	1,176.00	1,727.00	2,223.00	2,850.00	3,357.00	....
Annual Depreciation Charge	38.00	118.00	181.00	240.00	310.00	369.00	....
Actual Net Income	441.00	1,058.00	1,546.00	1,983,00	2,540.00	2,988.00	....
Capitalized at 10%	4,410.00	10,582.00	15,460.00	20,000.00	25,400.00	29,888.00	....
Land Value	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00
Building Value Residual	3,210.00	9,283.00	14,260.00	18,800.00	24,200.00	28,688.00	....

Schedule V.

Average wages and hours in the Steel Industry 1913-1929 (Bulletin of the U. S. Bureau of Labor Statistics No. 513, April, 1930)

All Departments		*Averages*	
Year	*Full time hours per week*	*Earnings per hour*	*Full time weekly earnings*
1913	66.1	$0.301	$18.89
1914	64.9	.301	18.60
1915	65.5	.297	18.65
1920	63.1	.745	45.65
1922	63.2	.513	31.67
1924	55.2	.644	35.22
1926	54.4	.637	34.41
1929	54.6	.674	36.48

Comment and Discussion

"Appraisal Of A 13-Flat Building"

I AM pleased to comment on the appraisal of James R. and C. D. Davidson of the thirty-six room, 13 apartment property, No. 1164 Connecticut Street, Gary, Indiana, as of May 11, 1934.

I find after careful study of this appraisal, that even though the first paragraph of the appraisal contains a figure of $20,000.00 as the appraisers' estimate of the value of the property, that the remainder of the appraisal consists of contradictory opinions and statements of fact, and voluminous statements in regard to world and national business conditions, and probabilities of future wage conditions in Gary, Indiana,—but little if anything as regards the original cost of the property or the rental income and operating expenses and taxes that have been experienced since the building was constructed in 1928. I find it hard to escape the conviction that the appraisers have not arrived at a real opinion as to the value of the property.

With the facts set forth in this appraisal, I venture the opinion that the value of this property on May 11, 1934, was not in excess of $10,000.00. Present conditions indicate $358.00 a year excess expense and taxes over gross income. I believe it is reasonable to assume that during the next ten years, this property may yield an average net income of $1,000.00 a year, and that the net income in the individual years may vary from nothing to $2,000.00 a year. The rental now being received from thirty-six rooms, $1,740.00, is at the rate of $4.38 per room per year. Probably the maximum rental that can be expected under the most favorable conditions is $10.00 per room per year.

The appraisal contains the statement that a recent survey indicates that there are no vacancies in this class of property in Gary, Indiana, which if true, indicates that this, or any other well-managed property should not be rented at figures insufficient to yield income necessary to pay operating expenses and taxes.

The introduction to this appraisal contains many statements with which I do not agree. I see no reason why an appraiser may not form an opinion as to definite values of real estate, although I realize that under existing conditions an honest and very substantial difference of opinion may be found in the opinions of individual appraisers. I should prefer not to include in an appraisal the following statement:

> "Meanwhile the country emerges from the pit of a terrific depression into an unpredictable future."

Our recent depression is not the first one we have experienced and history tells us that real estate has passed through and emerged from previous depressions with a far better record than many other forms of investment.

To quote again from the introduction:

> "Seeking values of real estate under these trying conditions, the thoughtful appraiser is in a humble mood. He knows, better than any layman, that the results of his best efforts are none too reliable."

My comment on this appraisal has been offered in response to the hope expressed on the appraisal that it will provoke criticism or suggestion. I hope the suggestions offered will induce other criticisms of the appraisal and of my comment regarding the same.

W. H. Ballard, M.A.I.

Boston, Mass.
May 24, 1934.

Comments on Davidsons' Appraisal

THE editor of the Journal of the American Institute of Real Estate Appraisers has requested me to comment on the appraisal of a 13-flat building. As I never had the pleasure of being in Gary, Ind., except in passing thru this city on fast trains, I do not feel that I am in a position to question certain facts upon which this appraisal is based.

I cannot agree with all the statements made in the four paragraphs embraced in the preamble. My conception of my duty as an appraiser is that under present economic conditions, all appraisals should reflect the reasonable market value of the properties appraised.

The appraisal shows that the appraisers have given much time and thought in assembling the data, but the final result does not leave in my mind the thought that it is a complete appraisal. The comments that I am about to make are only intended to be helpful to the appraisers who made this appraisal and to all real estate appraisers who may read this article.

Site and Location: I infer that the lot fronts 32 feet on Connecticut Street and runs through to an alley, giving access, light, and air to the rear of the property. It is stated that Gary is an industrial city of some 100,000 population and that the housing consists of approximately 12,500 single family dwellings and 12,500 apartment units, or a total of 25,000 units, for a population of 100,000, an average of 4 persons to a family, and that there are practically no vacancies.

Referring to *Schedule No. 1,* in my opinion, the depreciation of 15%, the rate used, seems high for a building built sometimes between 1927 and 1929. However, the statement is made that the building is in "poor to fair condition and seems to have been built sometime between 1927 and 1929." I do not want to question the statement of these facts, but the description of the improvement, which states that it is well-constructed, well-finished, with all modern conveniences and apparently at the most seven years old, indicates to my mind the possibility of poor materials, poor construction, that the occupants have abused the property, and that the unit used in Schedule No. 1 of 30c per cu. ft., cost of reproduction, is too high. Schedule No. 3 shows that the charges for a resident janitor, repairs, decorating, and management amount to $790.00 per year, this is not consistent with the statement that the building is "in poor to fair condition."

I cannot agree with the following statement: "This is an investment property pure and simple; and like all investment properties, has no real value other than that supported by earnings during its useful lifetime." In my opinion, other elements than earnings must be considered in ascertaining the reasonable market value of an investment property, such as the character, quality, and design of the improvement; is the land developed to its best use; the trend and direction of growth in the city; the kind and character of improvements in the neighborhood; and the demand for the type of property being appraised.

Schedule No. 2. From my experience in managing and owning flat buildings housing mechanics and workmen of modest means, I cannot conceive, even under present economic conditions, renting a 4-room apartment in a well-constructed building, with hardwood floors, tile bath, kitchen cabinets, ranges, refrigerators, hot water and heat at $15.00 per month, where in Schedule No. 3, the service charges for heat $540.00, Water $156.00, public light $72.00, janitor wages $20.00, plus free rent equal to $15.00, amounting to

$420.00, making a total of $33.00 per year per room, or $11.00 per month for a flat of 4 rooms, leaving only $4.00 per month, or $1.00 per room income to pay other charges.

Passing to *Schedule No. 4*, "Capitalized Income at Various Wage and Rent Levels," I will adopt for my comment the column headed by "Weekly Wages of $24.00." which, as I understand it, is the average wage of semi-skilled mechanics under the codes. In the set-up of rents, one 5-room apartment (the janitor's), is figured at the rate of $7.20 per room per month; one 4-room apartment is figured at the rate of $7.50 per room per month; five 3-room apartments are figured at the rate of $8.67 per room per month; six 2-room apartments are figured at the rate of $11.50 per room per month. To my mind, this seems very inconsistent. With all the appointments and conveniences furnished, such as hardwood floors, tile bath, kitchen cabinets, ranges, refrigerators, hot water and heat, my experience in studying the Federal Housing Problems would lead me to fix a minimum rental of $8.00 per room per month, with a possible exception of the 5-room apartment assigned to the janitor, which may be located in the basement as its location is not indicated in any part of the appraisal.

Going further down this column we find that the estimated net income is capitalized at 10%. My experience in these times of cheap money is that a rate not in excess of 6% should be given careful consideration.

I fail to find anything in Schedules 1, 2, 3, 4 or 5, which, to my mind, will substantiate a reasonable market value of this property as of May 11th, 1934 of $20,000.00.

Lewis R. Smith, M.A.I.
Cincinnati, Ohio.
May 24th, 1934.

The Davidson Appraisal

MESSRS. James R. Davidson and C. D. Davidson are to be congratulated for their thoughtful endeavors to discover and use substantial bases of a fundamental character upon which to predicate their conclusions as to the fair value of real property at this time when turmoil and disorder seem to permeate the entire business and economic structure. In their appraisal published in the Journal they have ventured upon what they evidently consider might be called "thin ice"; and in their prefatory remarks they have evidenced a due sense of humility on this account. However, the cornerstone upon which they have erected their appraisal structure rests upon a very strong foundation, namely, the ability of human beings to pay for necessary or desirable goods or services. They, therefore, need not fear any criticisms which their appraisal may promote, but, on the contrary, can feel gratified that they have performed a service by directing the attention of the Journal Readers to the fact that there are even now intelligent and logical approaches to the solution of the problem of real estate valuation.

The outstanding characteristic of their appraisal is their reliance upon inductive reasoning which starts from premises based upon present, past, and probable future wage earnings of the class of people who would be served by the accommodations afforded by the property appraised. It goes without saying that the rent-paying ability of any individual is dependent upon his earning ability or income. As wage levels decline residential rentals must also decline; likewise should wage levels increase, residential rentals will also be found to increase, but not simultaneously nor necessarily in like pro-

portion. On the downward trend rents will closely follow changes in wage levels, but they will lag behind when the trend is upwards. When a downward trend of wages is arrested, it generally leaves the worker saddled with a load of debts and obligations, to liquidate which requires the passage of time; for his reserves have become exhausted, and even if an upward trend in wages sets in, the increases which he receives must first go to discharge his accumulated and delinquent obligations. Therefore, his ability to pay increased rent is not *immediately* enhanced by wage increases.

The foregoing observation is very important, especially in its bearing upon the determination of the value of the property appraised by Messrs. Davidson; for the valuation which they report is predicated upon the assumption that the rental value of the property will increase from its present level of $217.50 per month to a point in excess of $384.00 per month (which rental value supports a property value of $20,000 as per their schedule No. IV) so that a fair average rental value (calculated not on an arithmetical but on an actuarial basis so that the "time" element is given effect) will be $384.00 per month. This involves a 76 per cent increase over the present rental value on the basis of the relationships between wages and rent-paying ability expressed in schedule No. IV. If such an increase were to take place in a period of three years, something like the following would have to occur with regard to the weekly wages of that class of individuals from which tenants for the property would be drawn:

Weekly wage for 1934..........	$16
Weekly wage for 1935..........	20
Weekly wage for 1936..........	25
Weekly wage for 1937 and thereafter	30

(Note that the arithmetical average for these four wage schedules is but $23.75; however, on a 10 per cent discount basis they are equivalent to an average of $28.15 per week beginning at the present time).

That there will be an increase in the wage schedules of steel workers and others, nearly all persons will agree; but it may well be questioned if such a rapid and great increase as that which is tabulated above can reasonably be expected to take place. For five years we have been going through a process of readjustment whereby the debt structure and costs of the various factors entering into production and distribution were being brought into line with the shrinking ability of the consumer to pay. This readjustment has commonly been called a "depression." This word suggests to one the dips or "depressions" one finds on the roller coasters in amusement parks; but the phenomenon may be like the roller coaster in another respect: the cars start out at a high point but when the journey is over they are down on the ground. And it is entirely possible that instead of being in a depression, we have merely come down from the heights to remain on a level where saner considerations actuate human activities.

It would seem that if 76 per cent, or a greater, increase in wage levels were to take place, such tremendous adjustments would be necessary that a long period of time would have to elapse before such a rise could be completed. Of course, if a period of unrestrained inflation were to set in, there is hardly any limit to the rapidity or precipitousness with which prices might rise; however, history discloses that in such a time wages do not rise in like fashion, and wage earners find themselves to be in worse and worse condition as the in-

flationary movement gains momentum. It is not likely that we will experience such a phenomenon in this country; and whatever procedure is followed in real estate appraising at this time, it certainly should not be based upon premises which expressly or by implication require, in order to be justified, that there shall be a price rise which would only come as the result of unwise and unrestrained inflationary measures.

Messrs. Davidson express their opinion that any valuation between $15,000 and $25,000 can be "creditably supported." While there certainly is a zone within which valuation estimates may fall and still be considered reasonable, and acceptable by reasonably minded people, it is questionable whether this zone, even at the present time, can be so broad as to include a variation of as much as 67 per cent in such estimates; and I am inclined to believe that in the case of the property appraised by these gentlemen, any estimate in excess of $15,000 is subject to serious question. This does not necessarily mean that one must disagree with their opinion that the restoration of the 1926 price levels is well within the range of possibility; but it does give serious consideration to the question as to when such a level might be reached again, which question is unanswerable and so admitted in the appraisal itself.

The average rental of $334 per month tabulated in column 3 of schedule IV is based upon an average weekly wage of $24 for the tenants of the property. For such an average wage to be established during the next three years would necessitate a rise from $16 in 1934 to $18 in 1935, $22 in 1936, and $25 in 1937 and thereafter. Such increases seem to be more within the realm of probabilities than any of the greater increases in the Schedule, and might prove acceptable where higher estimates would be rejected.

The appraisal report states "the fact that new housing for this class of tenants may be made to pay an attractive return will preclude over-building and keep rentals close to these upper limits." The assumption embodied in this statement is perhaps a dangerous one, for it is well known that inventive minds are seeking out new building processes and materials; and there can be little doubt that in the immediate future construction costs will be materially reduced as a result of new discoveries.

A word of warning against the indiscriminate use of averages is not out of place. The average wage for steel workers in the United States may or may not be applicable in determining the rent-paying ability of those steel workers from amongst whom tenants for the Gary property must be chosen. The average of three wage schedules of $10 per week, $60 per week, and $110 per week is $60, but this average would not be useful in any problem where the $10 per week or $110 per week wage earner was involved. This but suffices to point out the need of warning.

Under the heading "depreciation charge" attention is directed to the matter of accumulating a sum with which the improvement upon the property could be replaced at the end of its economic life. This places the emphasis on the wrong point. The problem is not one of accumulating money for replacement purposes, but rather one of placing a value upon a certain anticipated stream of income, and of recovering any portion of the investment which is in the nature of a wasting asset.

The capitalization of net income as effected in schedule No. IV embodies the hidden assumption, which is not tenable, that the future income stream will

remain level, whereas it is certain to decline except insofar as it is affected by rise in price levels generally.

In considering probable future price level rises, the appraiser may go astray unless he simultaneously gives thought to whether or not the utility of the property he is appraising will be enhanced in the future. Obviously in the case of the 13 flat building appraised by Messrs. Davidson, its utility as a place of residence for 13 families will not increase in the future insofar as the number of residential units is concerned. Its value as expressed in dollars may increase, but its value expressed in utility will undoubtedly decline due to increasing undesirability for residential purposes as the building ages and becomes obsolete. Such a "dollar" value increase would only occur in response to price rises in general, which would include increased costs of living. If utility is not enhanced but "dollar" value rises, it is entirely possible that the present warranted value of the property is not much more than a capitalization of its present rental value; for if the present net property earnings have a purchasing power as great as that which future net earnings will have (which relationship would exist if price increases or living costs, kept pace with increases in net earnings), then the property would be no more *valuable* at the higher dollar price than at a lower one, and increases in net earnings would merely mean that the property was holding its own in the general scheme of relationships. It would be like two automobiles, one "net earnings" and the other "price levels," in a race up the hill of "purchasing power": if they both go up the "purchasing power" hill together side by side, neither gains any advantage, no matter how high up the hill they go; only if "net earnings" outdistances "price levels," does it win the race and gain the prize of "increased value." Of course this consideration is difficult to apply in a given case but one must be conscious of it in order to keep one's balance. It is true, undoubtedly, that "net earnings" will have some lead over "price levels" in the case of real estate; for taxes and operating costs will not rise as rapidly as rental values, and therefore net earnings, being residual in nature, will rise more rapidly than price levels, for a time, at least, although lagging behind at the start. To the extent that the net earnings will rise more rapidly than price levels, the appraiser is warranted in including expectation of increased rental levels in his bases of valuation. However, if he is dealing with an "equity" then all earning increases, regardless of price level fluctuations, are important; for then all increases will make the equity more valuable at the expense of the holder of the encumbrance on the property.

The important point in the Davidson appraisal is this: appraisal procedure should give proper effect to the rent-paying ability of the class of people who will be attracted by the accommodations provided by the property involved; to the probabilities of increases in such rent-paying ability, and the time within which such increases may occur; but must also include considerations of whether or not any change in utility may take place, regardless of mere price changes which may be of no practical advantage if purchasing power changes in like proportion.

Ayers J. du Bois, M. A. I.

Los Angeles, California

May 28, 1934

Evidence

To Members of the Institute:

I THINK it is very appropriate for the membership to know of a recent selfish benefit that has come to a widely scattered group of Members of the Institute through the efforts of Mr. Bracton Goldstone, President of the New York Chapter of the American Institute of Real Estate Appraisers.

Through his activities for the Institute around New York the Institute's name came before an important State official whose duties at the present time have to do with the reorganization of a large number of financial institutions. In his work this official came upon interests in real estate in locations as far away as the Pacific Coast. He asked Mr. Goldstone for a list of the Institute Members, which was supplied. Information has recently been received that the fees involved in the appraisals for which this official has called in Institute Members have aggregated close to $10,000; and the work is still far from finished.

This official also has taken occasion to make very favorable verbal comment on the work he has received from the Members, particularly upon the fact that the reports were not mere opinions of value but were full reports on the properties.

Not only is Mr. Goldstone to be complimented and thanked for what he has done indirectly for the Institute and directly for Members, but we should recognize that here is a concrete case in evidence of the benefits to Members through cooperation, and the importance of careful selection.

Philip W. Kniskern, Pres.,
American Institute of Real Estate Appraisers.

New York City, N. Y.
May 21, 1934.

The Commodity Price Level and Real Estate Values

DURING these days of business recovery, we so often hear the remark, "Everything is going up but real estate," or, "The value of improved property will go up after everything else."

Although the public does not realize it, the value of improved real estate is increasing just as surely as though the price on it were changed every day as it is on listed stocks. This is because the cost of reproducing the buildings is constantly increasing.

In appraising a piece of property, among other things we must consider the following:

1. The value of the land.
2. The value of the building as determined by its reproduction cost less depreciation.
3. The value of the land and building together. This may be more or less than the sum of the value of the land and the reproduction cost of the building less depreciation. This depends largely upon whether the land has been developed to its highest and best use.

The value of the building is an important factor, especially in downtown properties where there are large office building developments. If the building is the one which puts the land to its highest and best use, its reproduction cost becomes a vital factor. This will vary from year to year as the commodity price index varies.

Taking the last ten years, we have the price index of building materials as follows:

1925	101.7
1926	100.0
1927	94.7
1928	94.1
1929	95.4
1930	89.9
1931	79.2
1932	71.4
1933	77.0
1934	72.2

These figures were taken from the report of the United States Department of Labor Bulletin of January, 1934.

In appraising any property during

these years, it can readily be seen that the value of the building would vary in each one of the years in direct ratio to the variance of the commodity price index.

Therefore in appraising a building, built in 1926, for example, assuming that the cost of that building in that year was $100,000; the reproduction cost for the same building would be as follows in each one of the succeeding years, assuming that the cost of labor varied proportionately:

1926	$100,000
1927	94,700
1928	94,100
1929	95,400
1930	89,900
1931	79,200
1932	71,400
1933	77,000
1934	72,200

The commodity price index can be obtained from the United States Department of Labor, Bureau of Labor Statistics, and should always be kept at the right hand of the appraiser in order that he may quickly and accurately determine the reproduction cost of the materials in the building which he is appraising.

Of course, these figures vary in specific cities but the average city variation would bear a fairly stable relationship to the national figures.

It is this increase in value of buildings because of the increase in the reproduction cost that is making the value of improved property increase and it will be a very material factor in again putting security back of mortgages and in increasing present equities.

Carlton Schultz, M. A. I.

Cleveland, Ohio.

April 25, 1934.

Appraising Fruit and Truck Land[1]

UNFORTUNATELY the valuation of an orchard for the purposes of securing a loan is usually based upon the value of the bare land with little or no consideration to the orchard as an improvement on the land. This is comparable to basing the loan value of a residence or business property upon the lot alone without reference to the improvements, and is a travesty upon the enterprise of orchard building.

The security of loans on orchard lands could be safeguarded by attention to certain matters when such loans are under consideration. (1) The moral risk should be determined by the personal character and technical skill of the orchardist seeking the loan. (2) The orchard site should be carefully examined, with special reference to type of soil, topography, and relative immunity from frost. (3) The varieties of fruit in the orchard should be listed, with a view to discouraging loans on orchards other than those composed of standard commercial varieties well adapted to the locality, and hence capable of yielding profitable crops. (4) The condition of the trees should be carefully noted, especially the color and smoothness of bark, amount of twig growth the past season (indicating general vigor), presence or absence of scale, kind and amount of recent pruning, indications of recent productiveness as shown by the fruit spurs in the case of apples or pears. If the examination is made during the summer or early fall, the market quality of fruit on the trees, as well as the quantity, should be noted.

In the appraisal of truck lands, special attention should be given to the adaptation of the type of soil and the climatic conditions of the locality to the particular crops that are being grown or to be grown. The richness of the soil is of special importance.

J. W. Lloyd.

Urbana, Illinois.

1. This article was written by J. W. Lloyd of the Department of Horticulture, University of Illinois, and was presented at a conference for land appraisers at that institution on September 25-26, 1933.—Ed.

Unit Costs Based on Cubical Contents of Buildings

ANNUALLY since 1915, the Detroit Real Estate Board has produced and distributed a schedule of unit costs employing cubical contents of buildings as the basis for determination of costs. The schedule, revised as of January 1st, 1934, is presented herewith.

The schedule of costs was produced primarily as a service to members of the Detroit Real Estate Board, as a guide in estimating construction or reproduction costs and as a possible guide to appraisers. Within recent years, scores of requests for copies have come from all parts of the United States and numerous trade publications have asked permission to publish the schedule. It has been and continues to be the policy of the Detroit Real Estate Board to authorize reproduction of the schedule by recognized trade publications and by banks, trust companies, insurance companies, building and loan associations, mortgage companies, appraisal organizations, etc., for the personal use of members of those organizations but no permission is given for reproduction of the schedule for sale. Additional copies may be purchased from the Detroit Real Estate Board at ten cents each.

The willing and painstaking co-operation of the Department of Buildings and Safety Engineering in the preparation of this schedule is appreciatively acknowledged. In using this schedule, the rules established by Commissioner Joseph P. Wolff and his department heads, should be observed. These rules follow:

"The cubical volume of a building for the purposes of determining the fees shall be measured as follows:

"From the outside of the walls and from the basement floor to the mean point of a pitched roof or to the highest point of a flat roof. The volume shall include all dormers, enclosed porches, pent houses, and other enclosed portions of a building, but shall exclude open porches.

"In the case of buildings without basements, the measurements shall be taken from the ground line, and in the case of large buildings having deep foundations, the height shall be measured from a point below the basement floor by an amount equal to 1-5 of the depth of the foundation.

"In the case of open shelter sheds and other open sheds, the volume shall be determined by measuring from the projection of the edge of the roof and from the ground line to the mean height of the roof."

The cost figures presented are presumed to represent the minimum cost at which a fairly good building of economic design, may be constructed under most favorable circumstances, within the Detroit district. The costs contain architects' fees and contractors' profits and include all general items of construction and equipment including plumbing and heating systems, elevators, etc. The schedule does not include costs of special equipment such as incinerators, refrigeration, compressed air piping, etc., and does not include the cost of financing.

As bids of individual contractors may vary from 20% to 50%, so may there be a marked variance in the costs of similar buildings erected within a single area. The quality of construction must be taken into account. The schedule presented is based upon the cost of average construction. The costs might be lessened by inferior construction or substantially increased by superior construction. In all instances the schedule should be used to reinforce rather than to supplant the experience, information and judgment of the user.

Since 1915, the schedule has been prepared under like circumstances and based upon like factors. It may be assumed, therefore, to present a rather accurate picture of the movement of building costs in the Detroit area during the past 19 years.

(See Chart on next page)

COST PER CUBIC FOOT IN CENTS

Classification of Buildings	Aug., 1915	Aug., 1920	Jan. 1, 1921	Aug. 1, 1921	Apr. 1, 1922	Dec. 1, 1922	Jan. 1, 1924	Feb. 1, 1925	Feb. 1, 1926	Feb. 1, 1927	Jan. 1, 1928	Jan. 1, 1929	Jan. 1, 1930	Jan. 1, 1931	Jan. 1, 1932	Jan. 1, 1933	Jan. 1, 1934
Factories and Warehouses:																	
Fireproof (Under 300,000 cu. ft.)	.14	.31½	.23	.18	.17	.21	.24	.23	.22½	.23	.22	.22	.22	.16½	.15	.14	.16
Fireproof (Over 300,000 cu. ft.)	.12½	.29	.21	.17	.16	.19½	.23	.22	.21½	.22	.21	.21	.21	.16	.14½	.12½	.14
Mill Construction	.10	.22½	.15½	.12	.11	.14	.16½	.16	.16	.16½	.15¾	.15¾	.15½	.11½	.11	.10	.11½
Ordinary	.09	.21	.15	.12	.10½	.13½	.15	.14½	.14	.14½	.14	.14	.13½	.10	.09½	.08½	.09½
Frame	.07½	.17	.12	.10	.08	.11½	.13	.11	.10½	.10½	.10	.10	.10	.07½	.07	.07	.08
Stores:																	
Fireproof	.23	.52	.39	.31	.30	.36	.41½	.40	.39	.39½	.38	.38	.38½	.30	.29½	.26	.30
Ordinary	.16½	.37½	.26½	.21	.19	.24½	.28	.26½	.26	.26½	.25½	.25½	.25	.20	.19	.16½	.20
Flats (Above Ordinary)	.22	.48½	.34	.27	.23	.30½	.31	.29	.28	.28½	.27½	.27½	.27	.22	.21	.18½	.21
Ordinary without Basements	....	....	....	.16¾	.16	.18½	.21	.19	.18	.18	.17½	.17½	.17	.14¼	.14	.12	.14
Churches and Theatres:																	
Fireproof	.18	.40½	.35	.28	.27	.32½	.37½	.36	.35¼	.36	.34¾	.34¾	.35	.27	.26	.22½	.26
Ordinary	.15½	.35	.24½	.19	.18	.22	.28½	.27½	.27	.27½	.26½	.26½	.26	.20½	.19½	.18½	.21
Office Buildings:																	
Fireproof	.30½	.68½	.54½	.44	.35	.51	.54½	.52	.51	.51½	.49¾	.49¾	.50	.39	.37½	.32½	.37½
Ordinary	.22	.48½	.34	.27	.25	.30½	.35	.33½	.32¾	.33¼	.32	.32	.32	.25	.24	.21½	.25
Hotels:																	
Fireproof	.33½	.75½	.58½	.45	.37	.52	.59½	.57	.56	.57½	.55½	.55½	.56	.42¾	.42	.37½	.43
Ordinary	.29½	.66½	.46½	.37	.26	.43	.43	.34	.32	.32½	.31¼	.31¼	.31	.25½	.24	.21½	.25
Schools:																	
Fireproof	.22	.48½	.40½	.32	.30	.37	.45½	.43½	.42	.43¼	.40	.40	.40	.32	.30	.27	.31½
Hospitals:																	
Fireproof	.32	.72	.54	.32	.33	.37	.45½	.43½	.42	.43¼	.45	.45	.45	.32	.32	.27¾	.32
All Steel Buildings:																	
Under 20,000 cu. ft.	.12	.25	.21	.17	.15	.19½	.20	.14	.13½	.13½	.13	.13	.13	.11	.11	.10	.11½
20,000 to 100,000 cu. ft.	.08	.18	.15	.12	.10	.14	.14½	.12	.11	.11	.10½	.10½	.10½	.10	.10	.09	.10
Over 100,000 cu. ft.	.06½	.14	.13	.10	.08	.11½	.11½	.10	.09½	.09½	.09	.09	.09	.07	.07	.06½	.07
Apartments:																	
Fireproof	.35	.78	.54	.43	.36	.50	.55	.52½	.51	.52	.50	.50	.50	.39	.37½	.34	.39
Protected	.29½	.66½	.46½	.37	.30	.43	.48	.46	.45½	.46	.44¼	.44¼	.45	.34½	.34	.30	.34½
Brick (Ordinary)	.28	.63	.43	.34	.23½	.39½	.34	.32	.30	.30½	.29½	.29½	.29	.24	.23	.22	.25
Brick (Veneer)	.24	.54	.37	.30	.22	.34½	.32	.30	.29	.29	.28	.28	.28	.22½	.22	.21	.24
Residences:																	
Brick	.30½	.68½	.48	.38	.33	.45	.48	.46	.45	.45½	.44	.44	.44½	.34½	.33½	.25½	.29
Brick (Veneer and Stucco)	.24	.54	.37	.30	.24	.34½	.34	.32½	.32	.32	.30¾	.30¾	.30½	.24	.23	.22½	.24½
Frame	.21½	.48½	.34	.27	.19	.30½	.30	.26½	.25	.25	.24	.24	.24	.20	.19	.19	.21
Frame (Not over 25,000 cu. ft.)	....	....	....	....	....	....	....	....	....	.20	.20	.20	.20	.15	.15	.14	.16
Cinder Concrete Block	....	....	....	....	....	....	.41½	.39	.38	.38	.36¾	.36¾	.37	.29	.28	.22½	.26
Garages:																	
Gas and Service Stations	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.21½	.25
Fireproof	....	.30	.23	.18	.17	.21	.24	.23	.22½	.23	.22¼	.22¼	.23	.17	.17	.15½	.17½
Mill Construction	....	.20	.15	.12	.11	.14	.16	.15	.14	.14½	.14	.14	.13½	.11	.11	.10	.11½
Ordinary	....	.17	.14	.11	.10	.13	.15	.13½	.12½	.13	.13	.13	.13	.10	.10	.09	.10
Frame	....	.14	.12	.09	.08	.10½	.12	.10	.09½	.09½	.09	.09	.09	.08	.07	.06½	.07½
Sheds without Heat:																	
Enclosed without Floor (Frame)	....	....	....	....	....	....	....	....	....	....	....	....	....	.04¾	.04½	.04	.04½
Enclosed (Frame)	....	....	....	....	....	....	....	....	....	....	....	....	....	.06	.06	.05	.06
Enclosed (Ordinary Constr'tion)	....	....	....	....	....	....	....	....	....	....	....	....	....	.09½	.09¼	.09	.09½
Enclosed without Floor (Ordinary Construction)	....	....	....	....	....	....	....	....	....	....	....	....	....	.09¼	.09	.08	.09½
Enclosed (All Steel)	....	....	....	....	....	....	....	....	....	....	....	....	....	.04½	.04½	.04	.04½
Enclosed without Floor (All Steel)	....	....	....	....	....	....	....	....	....	....	....	....	....	.03½	.03½	.03¼	.04
[illegible]	....	....	....	....	....	....	....	....	....	....	....	....	....	.03	.03	.03	.03

Digest of the Minutes

Meeting of Governing Council, American Institute of Real Estate Appraisers

The Governing Council convened at 10:00 A. M., April 20, 1934, at the Union League Club, Chicago. The following members were present:

Joseph B. Hall, Cincinnati, Ohio, Acting Chairman.

Samuel C. Kane, Philadelphia, Pa.

E. L. Ostendorf, Cleveland, Ohio.

Cuthbert E. Reeves, Buffalo, N. Y.

Mark Levy, Chicago, Illinois.

Norman L. Newhall, Minneapolis, Minn.

H. G. Zander, Sr., Chicago, Ill.

Joseph W. Hannauer, St. Louis, Mo.

Bracton Goldstone, New York City, Warren L. Morris, Cleveland, Ohio, and Harry Grant Atkinson, Director of Activities, were also present.

Minutes of Meeting Held January 17, 1934

Upon motion made by Mr. Ostendorf, seconded by Mr. Kane and unanimously carried, the reading of the Minutes of the meeting held on January 17, 1934, was waived.

Membership Report

The following membership report was submitted and aproved:

1. Number of Members, April 15, 1934.. 262
2. Number of Affiliates, April 15, 1934.. 184
3. Delinquents:

The names of Members and Affiliates, delinquent in the payment of dues since January 1, 1934, were reported.

It was moved, seconded and unanimously carried that the delinquent Members and Affiliates "cease to receive 'The Journal,' official notices, or any other mailings of the Institute"; and that each be notified that unless his delinquency is cured within ninety days, he will be suspended by vote of the Governing Council, in accordance with Section 4, Article VI, of the By-Laws.

It was moved that the names of these delinquents be sent to the local Chapters, notifying them of the action of the Governing Council. The motion was seconded and carried.

Financial Report by Mark Levy, Treasurer

The following financial report was read and upon motion made by Mr. Ostendorf, seconded by Mr. Kane, was unanimously approved:

Receipts to April 15, 1934	*Actual*	*Budgeted*
1. Bank balance as of 1/1/34	$ 860.05	
2. 1934 membership dues..	3,602.62	$2.500.00
3. 1933 membership dues paid in 1934..........	17.92	
4. Funds on deposit........	590.00	
5. Examination fee a/c.....	165.00	125.00
6. Journal	2,180.60	625.00
7. Receipts from sale of standard forms	2.80	
8. Receipts from sale of emblems	3.00	
Totals	$7,421.99	$3.250.00

Expenses to April 15, 1934		
1. Refund of dues	$ 25.00	
2. Administration (including bank tax, exchange on checks, general miscellaneous expense) ..	51.77	
3. Examination fee a/c.....	117.61	$100.00
4. Journal	1,360.21	750.00
5. Postage	27.35	
6. Printing and stationery.	134.25	1,977.51
7. Salaries and rent........	625.75	625.75
8. Funds on deposit........	115.00	
Totals	$2,456.94	$3,453.26

Actual bank balance 4/15/34......	$4,965.05
Funds on deposit	475.00
Available cash	$4,490.05

Report of Publications Committee by Mark Levy, Chairman

The following report of the Publications Committee was given. By unanimous vote the report was aproved and the action of the Committee in sending out the circulars to Home Owners' Loan Corporation appraisers commended:

"1. Subscriptions as of April 15, 1934:

A. Member subscribers	262
B. Affiliate subscribers	184
C. Non-member subscribers	203
	649

"2. Costs in 1934:

	Actual	*Budgeted*
1. Copyrighting ....$	4.00	
2. Postage in mailing....	52.26	
3. Advertising — Savings & Loans Journal....	88.20	
4. Printing January Journal	908.25	
5. Multigraphed letters advertising journal..	7.00	
6. Postage in mailing circulars to H. O. L. C. appraisers	75.00	
7. Wrappers	13.75	
8. Refunds and N. S. F.s.	196.25	
9. Printing	15.50	
	$1,360.21	$ 750.00

"3. Income from sale of subscriptions and single copies....... $2,180.60
"4. Surplus as of April 15, 1934..... 820.39
"5. Outstanding bills to be paid in May—(April Journal)........ 471.19
"6. We have recently prepared 10,000 planographed circulars advertising the Appraisal Journal, 5,000 of them are to be mailed to H. O. L. C. Appraisers; 3,000 are to be mailed to the Members of the Institute to be passed on with personal memos to prospects for subscription; and the balance are to be mailed to the general prospect list in the headquarters office.

"The effort to secure enough professional cards to fill one page in 'The Journal' did not succeed. The Committee, therefore, refunded the money that had been received from Members of the Institute who ordered their cards printed on the proposed page."

Waiver of Examinations

The following recommendation, approved by the Governing Council on November 21, 1933, was brought up for discussion and reconsideration:

"The Admissions Committee may recommend, and the Governing Council may elect to Membership without written examination such candidates as they may deem to offer sufficient qualifications without such written examination provided (1) the candidate has had long experience and accepted appraisal standing; (2) the application is favorably endorsed including a recommendation to waive the examination by at least three Members in good standing; and (3) the local Chapter, if there be one having jurisdiction over the professional territory of the candidate, endorses and recommends the waiving of the written examination."

Upon it being brought out that this recommendation is in conflict with subsection e, Section 2, Article II of the By-Laws which requires "satisfactorily passes a written or oral examination (either or both) given by the Institute," the Governing Council, upon motion by Mr. Ostendorf, seconded by Mr. Reeves, rescinded the order of November 21, 1933 and further stated that in the case of applicants already having applications for waiver of written examination filed with the Committee, some arrangement should be made for giving oral examinations.

Sponsorship of Candidates

The Governing Council, upon motion made by Mr. Kane, seconded by Mr. Ostendorf, rescinded the following resolution passed by them on November 21, 1933: "RESOLVED that hereafter applicants for Membership in regular or specialized grades be required to be sponsored by a Member in good standing, and further to be endorsed by two additional Members in good standing, provided that whenever there are not sufficient Members available in the locality of the applicant and then only, the Admissions Committee may take such substitute action as it decides to be proper. The names of sponsor and endorsers are to be included in the notice to the Members issued under Article II of the By-Laws."

The Council further approved the motion of Mr. Ostendorf, seconded by Mr. Kane, that in connection with all applications, three Members of the Institute in the territory be written requesting endorsement of the applicants' candidacy, and also that where there are not sufficient Members available in the locality of the applicant, and then only, the Admissions Committee may take such substitute action as it decides to be proper.

Report of Admissions Committee by S. C. Kane, Acting Chairman

Mr. Samuel C. Kane, Acting Chairman of the Admissions Committee, reported that the Committee had carefully considered the applications of sixty candidates for admission to the Member grade and were unanimous in their recommendation that the following candidates be elected to Membership:

George B. Horan, 115 Randolph Avenue, Waterbury, Conn.

Samuel Edmund McRickard, 400 E. Fordham Rd., The Bronx, New York City.

Charles W. Morrison, 35 Pierrepont St., Brooklyn, New York.

Axel John Swenson, 41-27 29th St., Long Island City, N. Y.

Richard T. Childs, 222 Front St., Mineola, New York.

John R. Hoyt, 17 E. 42nd St., New York City.

S. E. Kazdin, 2 Lafayette St., New York City.

Edward Eagan, 204 Starrett-Syracuse Bldg., Syracuse, N. Y.

Frank P. Felton, Jr., 37 S. 16th St., Philadelphia, Pa.

Maurice R. Massey, S. E. Cor. 13th & Green Sts., Philadelphia, Pa.

Henry S. Miller, 405 Southland Life Bldg., Dallas, Texas.

W. G. Burchfield, 803 2nd Natl. Bank Bldg., Houston, Texas.

It was moved by Mr. Hannauer, seconded by Mr. Reeves, that the twelve candidates listed above be elected to membership in the Member grade. The motion carried by unanimous vote.

Mr. Kane further reported the names of seventeen candidates whom the Admissions Committee recommended be elected to the Member grade, subject to compliance with certain specified minor details in connection with the completion of their respective application files. The names of the candidates were given and each case was explained by Mr. Kane. Upon motion made by Mr. Hannauer, seconded by Mr. Levy, and carried by unanimous vote,

these seventeen candidates were elected to membership in the Member grade, subject to the conditions specified by the Admission Committee.

Mr. Kane then gave the names of the remaining thirty-one candidates whose applications had either been definitely rejected by the Admissions Committee, or on whose applications action was deferred pending written examinations. The report of the Admissions Committee was approved by unanimous vote.

Report of Committee on Appraisal Procedure, Statistics and Research

Mr. Hall, Chairman of these three Committees recommended to the Council that these Committees be consolidated under the title of Education and Research Committee, and that this Committee devote its activities to three items as follows:

1. Terminology —problem of definitions.
2. Outline of readings.
3. Revision of the old Appraisal course of the National Association of Real Estate Boards, with the idea of making it a preliminary course to further study.

Mr. Levy moved that Mr. Hall's recommendation be accepted and upon the motion being seconded by Mr. Kane, it was so carried.

Report of the Membership Committee

Mr. Goldstone, Chairman of the Committee, gave a short report of the progress his Committee is making in securing applications for Membership, and stated that a questionnaire had been sent to Board Secretaries in towns where we had no representation asking for the names of prominent appraisers who would be eligible for Membership. A report on the success of this campaign will be given at the Convention in Minneapolis.

Report of Committee on Local Chapters

No formal report was made by the Committee on Local Chapters but it was moved by Mr. Kane, seconded by Mr. Ostendorf that the action of the Council by mail in establishing Illinois Chapter No. 6 be ratified. The motion was unanimously carried.

Correspondence from Massachusetts Members was read in connection with the formation of a Chapter in that State. The Council recommended that these Members be notified that upon receipt of their formal application for Charter, together with proposed By-Laws, the Council would be glad to take prompt action.

Correspondence was also read from Members of the Institute in Birmingham, Ala., expressing a desire to form a local Chapter there. Inasmuch as there are only four Members in Alabama, the Council recommended that it be suggested to these Members that additional Members be brought in before an application for a Charter be filed.

Nominating Committee

The following Nominating Committee, appointed by President Kniskern was announced:

Samuel C. Kane, Philadelphia, Pa., Chairman.
E. L. Ostendorf, Cleveland, Ohio.
Norman L. Newhall, Minneapolis, Minn.
Cuthbert E. Reeves, Buffalo, New York.
Maurice F. Reidy, Worcester, Mass.

Correspondence

Mr. Ostendorf presented letters from David L. Wickens, Economist, Real Property Inventory Unit, Department of Commerce, Washington, D. C. to Mr. R. T. Cragin, of Cleveland, Ohio, and Mr. Cragin's replies, with reference to securing Members of the Institute to assist in making appraisals in connection with this Department in their respective cities for a fee. It was decided that it was not within the jurisdiction of the Council to vote upon this, but that a letter should be written to Mr. Cragin thanking him for his bringing it to the attention of the Institute and stating that the Institute Members would be glad to co-operate with him in the matter.

Additional miscellaneous letters were read and ordered filed in the headquarters office.

An invitation to all Members of the Governing Council to attend The Fifth International Congress of Surveyors, to be held in London, Wednesday, July 18th to Saturday, July 21st, 1934 was presented. It was moved, seconded, and carried that this invitation be formally acknowledged, and that a copy of the Proceedings of this meeting be ordered for the Institute.

Adjournment

There being no further business to come before the Council, the meeting adjourned at 12:30 P. M.

New Members

At the Regular Quarterly Meeting of the Governing Council, held in Chicago, Illinois, on April 20, 1934, the following were elected to the grade of Member in the American Institute of Real Estate Appraisers:

D. D. SAYER, JR., LOS ANGELES, CALIF. Born in Chickasha, Okla.; Active Member and former director, Los Angeles Realty Board; Appraiser H. O. L. C.; Leasing and Purchasing Agent for Shell Oil Company; Manager, Estate of Florence R. Sayer; professional territory covers Los Angeles County; 3 years experience in the appraising of real estate; Graduate of the real estate course in the University of Southern California; Graduate of special courses in real estate appraising under Loring O. McCormick and George L. Schmutz.

GEORGE B. HORAN, WATERBURY, CONN. Born in Ottawa, Canada; State Chief Appraiser for the State of Connecticut, H. O. L. C.; Partner, John J. Horan & Son, engaged in the general real estate business; Member, Waterbury Real Estate Board under the firm membership of John J. Horan & Son; Teacher and Lecturer; 8 years experience in the appraising of real estate; valuation experience includes the appraising of homes, business property, stores, and vacant; A. B. degree from Dartmouth in 1923; built 78 homes between 1926 and 1930; Manager, Community Bond & Mortgage Corporation; Sponsored by Joseph P. Kennedy, M. A. I., and endorsed by John T. Sloan, M. A. I,. and Charles T. Lincoln, M. A. I.

F. ELIOT MIDDLETON, WASHINGTON, D. C. Born in Washington, D. C.; Active Member and Vice-President, Washington Real Estate Board; professional territory covers the District of Columbia and nearby Maryland; represented U. S. Dept. of Justice in many condemnation proceedings; appraised for the U. S. Treasury Dept.; served for 2 years on the Appraisal Committee, Washington Real Estate Board; actively engaged in various branches of the real estate business since 1910; Vice-President, Hedges & Middleton, Inc., from 1919-1928; 7 years experience in the appraising of real estate; in business now under own name; Sponsored by Harold E. Doyle, M. A. I., and endorsed by Morton J. Luchs, M. A. I., and R. Marbury Stamp, M. A. I.

HENRY M. CLARK, SPRINGFIELD, MASS. Born in Ware, Mass.; professional territory covers six New England States; Past Director, President, and Vice-President, Springfield Real Estate Board; 20 successful years experience in the retail clothing business; for 30 years has been actively engaged in real estate, insurance, mortgage loans, and property management business, and has appraisal experience covering all types of properties in the New England States; Sponsored by James D. Henderson, M. A. I., and endorsed by Maurice F. Reidy, M. A. I., and Bracton Goldstone, M. A. I.

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been engaged in liquidating a cemetery property on Staten Island, N. Y.; has liquidated properties in Key West, Florida; more than 15 years experience in the appraising of real property including condemnation cases and appraising for the Nassau County Trust Co.; Sponsored by Granville H. Rome, M. A. I., and endorsed by Bracton Goldstone, M. A. I., and Wm. F. MacDermott, M. A. I.

HERMAN A. ACKER, NEW YORK CITY, N. Y. Born in New York City, N. Y.; Member and President, Real Estate Board of the Bronx; professional territory covers the Borough of the Bronx; President, Herman A. Acker Corp.; Member, Deutsch Committee for Relief of Home Owners; Member, Post Committee on Real Property Inventory; formerly associated with Thomas C. Edmonds Company; active experience in construction; 12 years experience in real estate valuations.

S. EDWIN KAZDIN, NEW YORK CITY, N. Y. Born in New York City; Member, Real Estate Board of New York, Inc.; Vice-President, Northeastern Real Estate Securities Corp.; Appraiser, Real Estate Finance and Trust Co. of Wilmington, Del.; Vice-President, Land Equities, Inc.; Vice-President, Neresco Properties, Inc.; Vice-President, Bonded Equities, Inc.; Vice-President, Junior Equities, Inc.; Vice-President, Honeywell Avenue Properties, Inc.; Vice-President, Jersey Properties, Inc.; Vice-President, Consumer Research Co. of America, Inc.; employed by M. Morgenthau, Jr. Company in 1922; was appointed Manager of M. Morgenthau Jr. Company's Mortgage Dept. and in charge of all appraisals in connection therewith in 1923; graduated from New York University, B. C. S. Degree—specializing in Banking and Finance courses in 1924; Vice-President, Northeastern Real Estate Securities Corp. and Head of Appraisal Department since 1929; appraisal experience includes the valuation of apartment buildings, individual dwellings, stores, garages, theatres, loft buildings, etc.

EDWARD EAGAN, SYRACUSE, N. Y. Born in Pierrepont Manor, New York; class A Member, Syracuse Real Estate Board, professional territory covers Syracuse and vicinity and to a limited extent, all cities in the State of New York; Vice-President and Treasurer, Eagan Real Estate, Inc.; Member, New York State Bar; Director, Syracuse Title and Guaranty Co.; Director, Citizens Hotel Corp.; Representative, New York Title & Mortgage Corp.; 10 years experience in the appraising of real estate; 14 years experience in the general real estate business; Graduate, Syracuse University, College of Law with degree of L. L. B.; appraisal experience includes the valuation of commercial property, industrial property, apartments, homes, office buildings, etc.

RAYMOND T. CRAGIN, CLEVELAND, OHIO. Born in Seattle, Washington; Active member and Past President, Cleveland Real Estate Board; Member, firm of Cragin-Morris & Co.; professional territory covers Metropolitan Cleveland with occasional work in other territories; Originator and Chairman of the Cleveland Real Property Inventory; Lecturer, Author, and Teacher; twice a Member of the Valuation Committee of the Cleveland Real Estate Board; Past Director and Vice-President, National Association of Real Estate Boards; Past Vice President and for many years a Member of the Executive Committee, Ohio Association of Real Estate Boards; Sponsored by E. L. Ostendorf, M. A. I., and endorsed by T. D. Auble, M. A. I., and Warren L. Morris, M. A. I.

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EDWIN H. McINTOSH, CLEVELAND, OHIO. Born in Jefferson County, Ohio; Broker Member, Cleveland Real Estate Board; professional territory covers Cleveland and vicinity; Member, Ohio State Board of Real Estate Examiners; Manager, Society for Savings Building; appraisal experience includes the valuation of residences, commercial properties, farms, industrial property.

CARL A. PALMER, CLEVELAND, OHIO. Born in Whipple, Ohio; Class A Member, Cleveland Real Estate Board; Manager, The Citizens Building, Cleveland; professional territory covers Cuyahoga County, Ohio; President, Cleveland Real Estate Board, 1932; Chairman of the Board, 1931; Treasurer of the Board, 1930; Member of the Valuation Committee, 1926, 1927 and 1928; at present a Member, Board of Trustees, Cleveland Real Estate Board, and a Member, Executive Committee, Ohio Association of Real Estate Boards; entered real estate business in 1917 in partnership with Max J. Rudolph under the name Rudolph & Palmer; has conducted a general brokerage and appraisal business since 1927; Sponsored by E. L. Ostendorf, M. A. I.,. and endorsed by T. D. Auble, M. A. I., and Joseph J. Haas, M. A. I.; appraisal experience includes the valuation of residences, industrial property, vacant prop-

erty, apartment buildings, and special purpose properties.

MAX J. RUDOLPH, CLEVELAND, OHIO. Born in Hiram, Ohio; Class A Member, Cleveland Real Estate Board; professional territory covers Northern Ohio; Member, Valuation Committee, Cleveland Real Estate Board; L.L.B. degree from Western Reserve Law School, 1896; admitted to the Ohio Bar in 1897, and engaged in the active practice of law for 20 years; since 1917 has been in the real estate business as broker, operator, and appraiser; appraisal experience includes the valuation of commercial properties, apartment properties, and industrial properties; Sponsored by Joseph J. Haas, M. A. I., and endorsed by Warren L. Morris, M. A. I., and E. L. Ostendorf, M. A. I.

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MAURICE R. MASSEY, PHILADELPHIA, PA. Born in Philadelphia, Pa. Member of firm, Frank H. Massey and Maurice R. Massey; Trading as J. R. Massey and Son; established in 1860, one of the oldest real estate firms in the City of Philadelphia; 42 practical years experience in the general real estate field, including 35 years experience in appraising; professional territory covers Philadelphia and adjoining Counties; Active Member, Philadelphia Real Estate Board; Director, The Henry H. Roelofs Building and Loan Assn.

HENRY S. MILLER, DALLAS, TEXAS. Born in Dallas, Texas; Charter Member, Dallas Real Estate Board; professional territory covers the State of Texas; Acting Chairman, City Plan Commission, City of Dallas; 20 years active experience in the appraising of real estate; has served as a Member of the local real estate Board's Appraisal Committee continuously since the Board has been in existence, part of the time as Chairman; served as Chairman of Review Committee in 1932; Chairman, Business Property Appraisal Committee, 1933; President, Dallas Real Estate Board, 1926; Appraiser for the Dallas Building & Loan Association; Chairman, Tax Appeals Board, City of Dallas.

W. G. BURCHFIELD, HOUSTON, TEXAS. Born in Birmingham, Ala.; Director and Past-President, Houston Real Estate Board; Senior Partner, W. G. Burchfield & Bro.; Secretary and Director, Sims River Land Co.; Director, Edgewater Land Company; professional territory covers the State of Texas; Author and Lecturer; 20 years experience in the appraising of real estate; 5 years experience in reportorial and editorial work with newspapers; 27 years experience as a general real estate Broker.

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Current Articles

The full names of the magazines indicated by initials on these pages are given below:

A. F.	Architectural Forum	Monthly
E.	Economist	Weekly
N. R. E. J.	National Real Estate Journal	Monthly
R. E.	Real Estate	Weekly
R. & B. G.	Real Estate Record and Builders Guide	Weekly
S. M.	Skyscraper Management	Monthly

Copies of the magazines in which these articles appear may be secured from the Library of the National Association of Real Estate Boards, 59 E. Van Buren St., Chicago, Ill. The price listed includes the price of the magazine and a small service charge for mailing and postage. Subscriptions may also be placed with the National Association.

Actual Appraisal Reports. P. A. Gaddis. N. R. E. J. May, 1934, p. 43-44. $0.70. Valuation for State of New Jersey of land occupied by portion of abandoned canal.

Actual Appraisal Reports. D. E. Wilson. N. R. E. J. April, 1934, p. 40-42. $1.20. Appraisal of an industrial river front property for tax reduction purposes.

Apartment House Maintenance. E. E. Burkhard and F. G. Boulon. U. R. E. J. March, 1934, p. 49-50. $1.20. Detailed instructions on painting and decorating.

Apartment House Maintenance. E. E. Burkhard and F. G. Boulon. N. R. E. J. April, 1934, p. 47-48. $1.20. In this article consideration is given to insulation, light and power, and plastering.

Apartment House Maintenance. E. E. Burkhard and F. G. Boulon. N. R. E. J. March, 1934, 45-47. $0.70. This article covers plumbing and instructions on making and preventing repairs.

Appraisals and Architects. P. W. Kniskern. A. F. April, 1934, p. 291-292. $1.20. An appraiser gives some advice to an architect.

Assuring Accuracy in Valuation for Federal Home Loans. R. & B. G. May 5, 1934, p. 6. $0.70. The Appraisal Advisor of the Home Owners' Loan Corporation outlines briefly basic principles in appraising for the corporation.

Check and Double Check. H. O. Walther. R. E. April 28, 1934, p. 12-13. $0.30. A bit of appraisal history and a statement of appraisal methods of the Chicago office of the H. O. L. C.

Effect of City Growth on Values. H. W. Knodell. N. R. E. J. March, 1934, p. 31-32. $1.20. Includes a table showing how 25 of the leading cities have grown since 1900.

Future Needs of Land for Residential Development. R. & B. G. May 12, 1934, p. 8-9. $0.70. A special analysis by the Regional Plan Association of future requirements for new residential development in the New York region looking towards an estimated population of 16,000,000.

Home Always a Going Concern. W. H. Newton. R. E. April 28, 1934, p. 14-16. $0.30. Condensed from speech given before regional dinner conference of the American Institute of Real Estate Appraisers in Chicago.

How the Assessor Valuates Real Estate. H. A. Bodewin. E. April 20, 1934, p. 11. $0.30. Fundamentals of the Cook County assessor's method of arriving at valuations for taxation purposes.

The Mortgage and Tax Situation of a Census Tract. A. C. Holden. R. & B. G. April 14, 1934, p. 6-7. $0.70. This study throws some light upon the "fantastic" values for which, it has been charged, New York real estate men are "obstinately" holding out, and which it has been implied is the chief obstacle holding up the government's slum clearance program.

New Ruling on Depreciation. N. R. E. J. May, 1934, p. 34. $0.70. U. S. Treasury revises procedure of figuring allowances under income tax.

People Cause Value Variations. Homer Hoyt. R. E. March 31, 1934, p. 13-16. $0.30. Number of persons passing a location determine its value for commercial purposes.

Profit as an Assessing Factor. Homer Hoyt. R. E. March 24, 1934, p. 15-19. $0.30. Consideration of income in determining values for purposes of taxation would produce more equitable results and flexibility to meet conditions.

The Ratio Between Mortgage Debt and Real Estate Value. R. & B. G. March 31, 1934, p. 8. $0.70. A chart compiled by Robert H. Armstrong of Armstrong & Armstrong, New York City.

Relation of Structural "Ratings" to Federal Bank Loans. C. A. Mann. E. May 18, 1934, p. 12. $0.30. Ratings of structural merit for buildings is the basis of a growing movement throughout the country.

Sheridan-Karkow Formula for Determining Rental Values. L. J. Sheridan. S. M. May, 1934, p. 12-14. $0.45. Original story brings forth numerous questions which Mr. Sheridan answers in this second article.

What Causes Peak Land Values? Homer Hoyt. N. R. E. J. May, 1934, p. 29. $0.70. Brief article showing the effect of purchasing power, building height limitation and size of city upon the worth of the highest value spot in each city.

Book Reviews

Hanson, Peter and Pollard, W. L. CONDEMNATION APPRAISAL PROCEDURE. Glendale, Calif. Authors, 1934. 467 p. $10.00.

Economic change which has taken place at a furious pace since 1900 has brought about a rapid development of cities which has modified their complexion and necessitated a shift in property use. This shift has complicated and increased the problems of the real property appraiser many-fold. The demand for geographical concentration has tended toward a skyward development in building, which in turn, to permit easier access to the congested areas, has resulted in great street-widening programs.

Governmental bodies and public agencies more and more resort to condemnation proceedings for the acquisition of properties required to satisfy a public necessity. The process is difficult and has been fraught with abuses proceeding from the ease with which witnesses may qualify for value testimony and the readiness with which some persons will sell their testimony to one party or the other.

Thus, say Peter Hanson and W. L. Pollard, there is a vital need for a comprehensive work, for perusal and study by appraisers throughout the land and their answer is the recently published volume entitled *Condemnation Appraisal Procedure.*

Condemnation proceeds, so states this volume, from the constitutional limitations upon the right of the government to deprive any person of life, liberty, or property without due process of law or take private property for public use without just compensation. The acquisition of private property for public use is permitted, however, where just compensation is paid, under the right of *eminent domain.* This is the right of the people or government to take private property for public use wherever the agencies of the public cannot be adequately met or provided for in any other way.

In the last analysis, it is the work of the appraiser to determine, give, and substantiate property values. Where an entire parcel of land is taken it is the market value of the land which represents the compensation to be paid the owner, according to the major portion of judicial opinion. Opinions as to what is meant by market value often differ and sometimes conflict. Generally, however, it refers to price, in terms of money, under average market and economic conditions, determined after fair efforts to sell, with proper advertising and reasonable time allowed, in a free and open market, by a seller willing to sell, to a buyer willing to buy, with full knowledge of all of the facts and in the exercise of intelligent judgment. This value is based not upon the use to which the property is actually put, but upon the highest and best use to which it might be put.

Of course, there are a number of mechanical, mathematical, rule-of-thumb systems for determination of value, all of which may be used as guides. There are tabular data set forth in the book, many of which are familiar to the experienced appraiser. These scientific methods must be adopted, however, only as guides. Sound appraising rests finally upon sound judgment for which there is no formula. It arises from a background of experience than which there is probably none of greater quality than the Realtor's. It is necessary for the appraiser to use certain physical and factual data; but the proper assembly, interpretation, and application of such material requires keen judgment and plenty of common sense, which are the chief assets of the appraiser. The factors which enter into value are too numerous and varied for the use of science alone in its determination.

General methods of assessing value described in the volume are the "square foot" method by which all the square feet of land in a parcel are assumed to be of equal value (an unwarranted assumption since the rear portions of a parcel are usually less valuable than the frontage); the "depth factor" method by which a value is given a strip one foot wide and one hundred feet deep and the values of such strips having other depths are determined therefrom by use of the depth table; and the "before and after" theory, which is described as the only true basis for damage. The latter principle holds that the amount of damage which should be allowed for property taken under *eminent domain* is the difference between the value of the property as it was before the taking and the value left after the taking, if anything. This principle is particularly useful in connection with the sometimes very difficult task of arriving at "severance" and "consequential" damages—fields in which a deep understanding of property and its uses is necessary. "Severance" refers to the damage resulting when only a portion of the land in question is taken and some remains. "Consequential" damage is the reduction in value caused by some direct or indirect injury such as pollution of a stream, the annoyance of crossing a railroad dividing a parcel in two, change of street grades, etc.

The authors take issue with the use of "market value" as the appraiser's criterion. "Market value," so they say, has been so construed in numerous decisions that when we use the expression, we actually refer to "market price." Land, being a slow moving commodity and in times of depression being almost entirely unsalable, has no "market price." A "willing seller" and a "willing buyer," prerequisites to the "market value" theory, do not exist today

and the results of appraisals in recent years are, therefore, grossly inaccurate. In our determination of damages in condemnation proceedings, we should forsake "market value" as our end and substitute in its place "warranted value" which is described as being that which "market value" ought to be. When private property is taken, the owner should be paid, not on the basis of what some buyer is willing to pay for the property, but on the basis of what such a buyer ought to be willing to pay, considering the probable future benefits to be derived from ownership of the property and its investment value. It is admitted that the use of "warranted value" might result in reversal of court decisions for the time being, since "market value" is now the established guide, but the authors consider the risk worth taking since we are facing a situation which calls for a strong position.

The authors have used an easy style which is not tiring and have arranged their work in a compact, orderly and logical fashion so that one may use it for reference as well as study purposes. At the end of each chapter there is contained a list of citations to court decisions to which reference is made in the chapter for authority. In conclusion, let it be said that as a text, this volume is a valuable contribution and to the appraiser, the Realtor, the lawyer, and the governmental employee whose tasks involve condemnation appraisal, your reviewer recommends it without hesitation.

Joseph Laronge, M. A. I.

Cleveland, Ohio, May 1, 1934.

Haney, L. H. ECONOMICS IN A NUTSHELL. New York: Macmillan, 1933. 209 p. $2.00.

"To Hope,
My daughter, whose
clear young eyes tell me that
in the future
bunk may not
prevail."

This is the way that *Economics in a Nutshell* by Lewis H. Haney, Professor of Economics at New York University, begins. And to one who has read his book, this dedication of his publication directs thought to his first chapter entitled, "Who Are the Economists?" Individuals so designated have been so prominently before the public in these past several years, and their viewpoints and analyses have been so radically in opposition to each other, that perhaps there has been a tendency on the part of the public to deride economics and "economists" as "all the bunk," although at the same time this public has experienced an awakened interest in the study of economic science. From the dedicatory passage quoted above one can conclude that "economists" are, after all, human beings, with human interests (and hearts) —and subject to the errors of judgment and belief which largely characterize the human mind. However, they should be credited with having the human welfare at heart, even if they do claim that morals or ethics have no place in the consideration of economics, and thereby divorce from their "science" that which is, and never was more, sadly needed in it and in every field of human endeavor and study. Their contrarieties of belief will be overlooked by him who realizes that out of the confusion, ideas will emerge which will lead the race forward in some respects at least.

Here is a book which is written in simple language that all can understand. It has no ponderous, lengthy, deeply involved and technical discussions; for within its covers are 60 chapters, although the pages number but about 200. Thus it is apparent that each chapter is "pithy"; and the justification of the title of the book—the "nutshell" part—is seen. The simplicity of the subject matter, and the steadfast adherence of the author to essentials and fundamentals will cause the book to have strong appeal to anyone desiring quickly to survey the framework of the science of economics as this author and many other economists conceived it to be in 1933.

Observe the titles of some of the chapters: What Is Wealth? Is Competition "The Life of Trade"? Why Do We Need the "Price System," With a "Standard of Value"? How Is Our Money System Composed? How Does Credit Work? What Different Kinds of Inflation Are There? What Are the Real Essentials of Production? What Can Be Done by Sharing Jobs? How Is "Land Rent" Determined? Are Protective Tariffs a Protection to a Nation? When Is Government Interference With Business a Good Thing? Should We Not Count the Cost of Government Participation in Business Control? What Can We Learn from Economics?

There is a very wide range of subjects covered, and in an elementary manner. The reader will make some interesting observations as he reads the chapter on devaluation of the dollar (written before our American dollar was devaluated); and other chapters which deal with matters now the subject of Federal activities, such as the proposed shortening of hours of labor and increase in wages, etc. In one chapter dealing with labor policy, Professor Haney expresses his view that "in a real sense shorter hours mean less employment. . . We can't increase total employment (in labor hours) by reducing the hours worked!" The context surrounding this passage is interesting and provocative of thought, and, perhaps, argument.

In Chapter 45, "What Can Be Done to Prevent Business Cycles?", Professor Haney brings some moral and ethical considerations into his discussion of economics, thereby, perhaps, departing from his premise that this science is not concerned with such matters. This departure, if such it can be called, is a welcome one; for he says that the main trouble which causes business cycles (he calls these "bad") with their alternate "booms" and "depressions" is

generated "under the influence of greed, the gambling instinct, and ignorance." If he is right, of what value is economics (or any other branch of human knowledge) when divorced from moral and ethical science?

It would be to the advantage of any appraiser who has not investigated economics to read *Economics in a Nutshell.* Unfortunate, indeed, is the widespread ignorance of so-called "practical" appraisers with regard to simple economic laws. This ignorance is a tremendous obstacle to the development of sound judgment in appraisal work, and renders the product of such men not only worthless but misleading and capable of causing serious financial losses to any who might rely upon it. Every appraiser should feel that it is positively essential that he have a grasp of the fundamentals of the science of economics before he offers his services to an unsuspecting, and often undiscriminating, public. In *Economics in a Nutshell* he has a sort of "hand-book" which, if studied, will enhance the worth of all his work.

Though you may differ with Professor Haney in some particulars, his book is to be commended, if for no other reason, because of its "understandableness," its lack of ponderosity, and withal its comprehensiveness—to say nothing of one's appreciation of his reassuring dedicatory remark that in his daughter's eyes it was foretold that "in the future bunk (would) not prevail"—a consummation devoutly to be wished. Ayers J. du Bois, M. A. I.

Los Angeles, California, March 5, 1934.

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